

American Forests *and* Forest Life



August, 1926

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ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in co-operation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of stream-flow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

Entered as second-class matter at the Post-office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided in Section 1103, Act of October 3, 1917, authorized July 10, 1918.
Additional entry at Baltimore, Md., authorized July 23, 1925.

Member A. B. C.

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AMERICAN FORESTS AND FOREST LIFE

The Magazine of The American Forestry Association

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TOM GILL, Associate Editor

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Vol. 32

AUGUST, 1926

No. 392

Published monthly—35 cents a copy—\$4.00 a year.

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The photograph was made by Mr. Asahel Curtis of Seattle.*

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OUR "PARKS" NUMBER

August was chosen, when all the world is on recreation bent—to devote most of these pages to telling our readers, pictorially and through articles by authorities, something about the beauty and accessibility of many of our nationally owned recreation areas,—notably the National Parks and National Monuments. We present our "Parks Number!"



Courtesy National Park Service

A HIKING PARTY AT THE RIM OF NISQUALLY GLACIER, IN RAINIER NATIONAL PARK

This Park is eighteen miles square and surrounds the great mountain from which it takes its name. Rainier, known as the "Snow Queen," is one of the highest perpetually snow-capped mountains in the United States, being 14,408 feet above sea level. Rainier's glacial system is one of its chief attractions and every day during the season trips are made over the glaciers under the direction of trained and expert guides.

AMERICAN FORESTS

VOL. 32

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With the Ranger Naturalists

The National Parks Create a New Educational Service for Visitors

By ANSEL F. HALL

MANY years ago, an old friend said to me, "Son, remember that your travels cannot be measured by the miles you cover." Tapping his brow, he went on, "It lies right here." You may prove to yourself in a few moments at any tourist center the truth of this old man's observation. You will find hundreds going through a vacation routine without enjoying or even half seeing the very things that thrill a person who looks with understanding. Especially in the out-of-doors is that true, and until

recently it was hardly less so in the National Parks than in other wilderness areas.

Now, however, since the National Parks are efficiently protected and the safety and comfort of visitors is assured, the National Park Service is turning its attention to another exceedingly important class of service to the public. Lectures, field trips with Ranger Naturalists, museums, wild flower exhibits, information service, non-technical natural history publications—these and other similar activities, all planned



IN GLACIER NATIONAL PARK—A BLACKFEET CAMP ON THE SHORE OF TWO-MEDICINE LAKE

The sight of picturesque Indian tepees greets the tourist here as he drives up to the hotel. And later, in the evening he will hear the thumping of tom-toms and the jingling of cistra, and may perhaps even see a ceremonial dance.



Ansel F. Hall

THE PEAKS SURROUNDING LAKE ST. MARY TELL THE STORY OF EIGHTY MILLION YEARS

Through the talks given by the Ranger Naturalists visitors are more able to enjoy, through deeper understanding, the natural marvels they see, and which have heretofore been more or less matters of mystery or conjecture.

to help visitors to more thoroughly enjoy their vacation in the Parks by giving them a more thorough understanding of what they see, are carried on by Ranger Naturalists and other officers of the newly formed Educational Division.

I'm going to invite you who are interested in the out-of-doors to accompany me as I turn in retrospect to last summer's inspection trip through the National Parks. Educational service of some kind is being carried on in each of the Parks and so a tour through Glacier and Yellowstone with the Ranger Naturalists will give you an idea of what to expect elsewhere. It should be borne in mind, however, that each Park has an individuality which is only accentuated when detailed attention is paid to its natural phenomena.

From a rendezvous in northwestern Montana we approached Glacier National Park from the east. This was my first visit. For years I had seen photographs of the charming lakes and spectacular mountain peaks of this region and so was prepared for the superlative mountain beauty to be found there; a beauty, however, which I expected to be somewhat austere in light and dark monochromes. Miles away, the peaks glowed with vivid color in the morning sunlight. Great bands of red and green and yellow and gray, each thousands of feet in thickness, made up the mountain mass and caused me to turn again

to my government information booklet to seek further enlightenment. I had read it twice and knew that in past geological ages, these great mountains had been moved bodily from their original bases several miles westward to the position they now occupy. But the color—why had someone not mentioned that for the benefit of the uninitiated? Finally I found it in large print, "The great band of green, three and one-half thousand feet thick is Apkekunny argillite." Evidently the name had caused me to miss the fact that it was, in other words, green shale; then I dimly remembered from a geology course

taken many years ago that the name argillite comes from the Greek word *argilos* or clay.

Originally all of this great region must have been deposited as fine silt beneath the waters of an ancient sea. Our information booklet told that the two thousand feet of red rock was also shale and the broad bands of buff and yellow, above and below, were limestone, deposited during untold ages beneath an ancient ocean. What an adventure! I eagerly looked forward to finding fossils of primitive animals and plants in these rocks.

As he drives up to the massive Glacier Park Hotel the sight of Blackfeet Indian tepees greets the tourist's eye. Likewise it arouses his expectations. That night after dinner, he will hear the thumping of tom-



Ansel F. Hall

A CUT WILDFLOWER EXHIBIT
In Glacier Park, the displays of the wildflowers are one of the most striking features of the educational activities.

toms and the jingling of cista and will be treated to ceremonial dances. The well-fed, gorgeously dressed braves, lounging near most of the hotels, seem to enjoy the nightly performances during the summer season as much as do their white brothers. The myths, folk-lore and tribal customs of the Blackfeet are fascinating indeed, and our few contacts with this people in their summer finery made us wish we might have had more time for personal acquaintance.

Driving northwestward parallel with the chain of peaks which lay ever to our left, we were met at St. Mary Chalet by the acting Park Naturalist, Dr. M. J. Elrod, who directs the educational activities in Glacier National Park during the summer season. I was surprised to find here a truly remarkable display of wild flowers brought down that very morning from their garden homes near the glacier thousands of feet above. We learned that this and other similar displays are maintained at most of the main hotels and camps, so that visitors in this Park become acquainted with the blossoms that greet the eye along every trail and roadside.

During our ride up Lake St. Mary, which penetrates southwesterly directly into the heart of the mountains, we were entertained by a young Ranger Naturalist who told us in simple language the dramatic story of the mountains; how they were formed beneath the sea, elevated, subjected to great stresses, buckled and pushed many miles toward the plains, and lastly, carved by water and ice. I asked about the fossils which I had expected to find and thereby furnished amusement for the



Lindley Eddy
CUB TRIPLETS IN THE GIANT FOREST

Apparently none too trusting, these little chaps are looking the visitor over thoroughly before accepting his advances.



J. E. Haynes
OLD FAITHFUL
Yellowstone's great attraction in beautiful action.



National Park Service

NOT AN ELECTRIC PERCOLATOR, BUT JUST AS EFFECTIVE
Dr. Henry S. Conard, Ranger Naturalist at Camp Roosevelt in the Yellowstone, cooks coffee on the hot formation for one of his hiking parties.

party. Had I read my book more thoroughly, I should have noted that these rocks were exceedingly ancient, having been laid down more than eighty million years ago in the so-called Algonkian or Proterozoic Era, when the primitive animal and vegetable life was so minute and soft-bodied that few definite records were left in the form of fossils.

The enthusiasm displayed by Park guests during the fifteen-mile ride to



Ansel F. Hall

A STANDING STUMP IN THE FOSSIL FOREST

This has been identified as an extinct species of sequoia, in Yellowstone's remarkable fossil forest of standing trees.

Going-to-the-Sun Chalet made me rejoice that it is our good fortune to teach from Nature, not books; there before us lay the records of eighty million years and the few simple words of our friend, the Ranger Naturalist helped us to understand their tremendous and logical story.

Returning to St. Mary Chalet, we drove northward to Many Glacier Hotel on Lake McDermott, in the heart of that spectacular mountain country. A number of persons were gathered in one end of the lobby and so, after registering, we strolled over to see for ourselves what could be holding their interest. We found a splendid exhibit of cut wild flowers and a representative collection of rocks from the nearby peaks in full view through the huge plate glass windows. Dr. Elrod explained that as many as two hundred specimens of flowers are sometimes shown here at the same time. From the terrace overlooking the Lake we saw several white specks on the mountain crags above. These same specks under the magnification of field glasses resolved themselves into mountain sheep and mountain goats browsing on seemingly inaccessible ledges. In an informal lecture, the Park Naturalist told us about these and other animals to be found along the trailside.

Some day, he said, he hoped to establish a small museum at this point—not with any idea of competing with the exhibits to be found in our bigger

museum, the out-of-doors, but rather to house exhibits which will serve as a key to the understanding of Nature. This is a principle which is being followed in the establishment of all the museums, branch museums, and smaller exhibits in the National Parks, namely, to help tell the short, consecutive story of Nature in that particular Park so that it will be understood by all visitors. Since living exhibits are at hand growing in their natural habitat, it will not be necessary to build up the huge research collections so necessary to the large museums in various parts of the country.

Two days drive to the southeastward from Glacier National Park brings you to Yellowstone. Were it only for the elk, deer, bear, moose and other big-game mammals that wander through its two thousand square miles, Yellowstone would rank as one of the greatest National Parks. Add to this, however, hundreds of spectacular geysers, the Mammoth Hot Springs and other thermal phenomena throughout the Park, the colorful and profound Grand Canyon of the Yellowstone, Sylvan Lake Yellowstone lying more than a mile and a quarter above the sea, the fossil forest of standing trees, and more remote snow-clad mountain peaks; then you will know why Yellowstone has long maintained its peerless reputation.

Mammoth Hot Springs, the administrative center of

(Continued on page 492)



Ansel F. Hall

BEELZEBUB, THE PET CROW AT TOWER FALLS

A prize thief, he stole Ranger Bauman's pocket comb, but brought a battered silver quarter in exchange!



EXQUISITELY BEAUTIFUL IS THE REGAL MOTH (*Citheronia Regalis*) WHEN IT SPREADS ITS WINGS. THIS IS THE ACTUAL SIZE OF THE PARENT OF THE HICKORY HORNED DEVIL

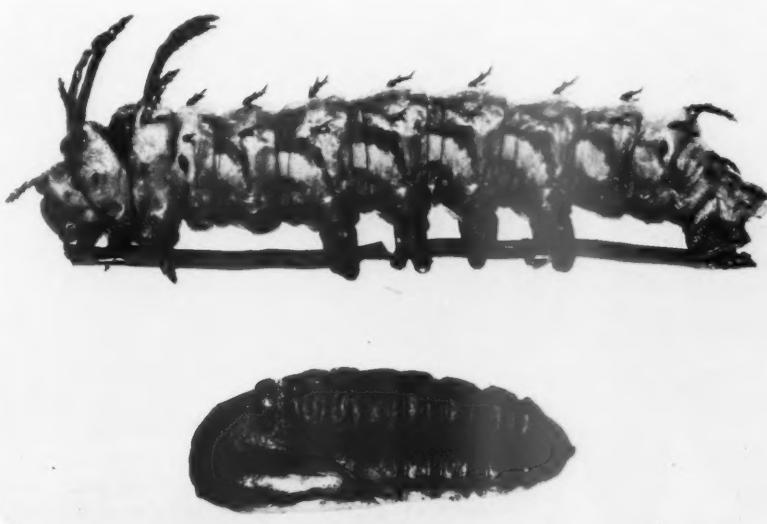
Some Aristocrats of Mothland

By A. B. CHAMPLAIN and H. B. KIRK

WE were hiking through Clarks Valley, near Dauphin, Pennsylvania one day during July looking for adventures in nature. Coming upon a place where young pines of several varieties covered a large area, we decided to stop and investigate. Pines held several interesting possibilities for us, and we proceeded to poke about hoping to learn more of Mother Nature's secrets. We knew the places where the orchids, those aristocrats of the plant world, hid and grew; we knew where the copperheads and rattlers lived; we had met many of the wild folks of the valley, and most of the insects were familiar to us, but—here upon a pitch-pine bough hung something new to us which drew our attention, and thereby hangs this tale.

Clasping a branch with its prolegs and feeding upon the pine needles was a for-

midable looking creature, armed with a panoply of thorny brownish-yellow horns and spines. It was almost four inches long and matched the pine bark in its reddish-brown color. At our approach it stopped feeding and wriggled the fore part of its body and head sharply from side to side, as if to use the longer curved horns upon that end of its anatomy as weapons of offence. Thrilled, we gazed upon our first specimen of the larva or caterpillar of the pine Citheronia, the very rarest of our Royal moths. Of course, we captured the specimen—a very simple matter, for the caterpillar did not attempt to run away. We were very careful too in handling it—not because of any fear of the creature, which in spite of its formidable appearance, is quite harmless, but to make sure that it was not injured. Soon it reposed in our collecting box, to be pho-



REPRODUCED IN ACTUAL SIZE, THIS IS THE LARVA AND PUPA OF THE REGAL MOTH. THIS CATERPILLAR IS KNOWN AS THE HICKORY HORNED DEVIL

tographed later. Royal moths comprise a small family of fairly large as well as very large moths that are beautifully and contrastingly colored. Most of their caterpillars are furnished with horns, spines or similar processes. Our Pine Citheronia belongs to this family. It is confined to the Atlantic States of North America and is our rarest species. Our own specimen was about full grown, and had lived and fed upon the pine needles since hatching from the egg placed upon the needle by a parent moth some five or six weeks before. Were we to rear this insect to maturity, we should require a pot of earth, for our caterpillar goes into the ground to pupate and winter, instead of spinning a cocoon. The next spring if we had good luck an adult would emerge, a sombre colored moth with body, legs and wings uniformly dark gray with a lilac tinge and a few contrasting lighter reddish patches at the wing bases.

Our next find of interest as we left the pines and entered the area of the broad-leaf trees was a "Hickory Horned Devil." Perhaps you have seen the Hickory Horned Devil, a caterpillar that is closely related to the Pine Citheronia. It is not common, but is more often met than the other. In most places it is dreaded as much as though it were at rattlesnake, and few persons are bold enough to put a hand upon it.

Larger than the other species by several inches, for it was about full fed, and therefore full grown, it clung to a walnut leaf which it was leisurely eating. Large black and orange colored horns and spines adorned its body, which was of a greenish yellow color, and upon this were patches and markings of black, blue and orange. At our approach it also moved its head and thorax from side to side, with quick, jerky movements; but we handled the specimen freely, for the threatening aspect was all a bluff—it might do to frighten a bird or some other predatory creature, but we were well aware that the horns and spines were harmless. In fact, the Hickory Horned Devil becomes used to this treatment, and we have reared many of them from egg to adult in cages. As the food plant must be changed daily to get good results, they soon become reconciled to a cer-

tain amount of careful handling.

The eggs which are of a yellowish amber color, less than one-eighth of an inch across, are placed by the parent moth upon the plant on which the caterpillar later feeds. These caterpillars upon hatching are miniature Hickory Horned Devils, and at this time voracious feeders. They feed upon a variety of food plants in nature, and we have found them eating the leaves of walnut, hickory, ash, sycamore, linden, and a number of other varieties.

Hickory Horned Devils grow rapidly, and when full size enter the ground to go through their final transformation. Here in the pupal stage the development of adult characteristics takes place, and finally from the black pupal shell a perfect moth will emerge.

Citheronia regalis or Regal Moth is a fitting name for this beautiful creature. Large specimens measure over six inches across the spread wings, which are olive gray or lilac gray. Streaks of light red mark the veins of the forewings, while the hind wings are rust red, paling into yellow toward the edges. Striking yellow spots are present in uniform areas on both wings, and the body is covered with light red velvety hairs, the segments edged with yellow.

One occasionally runs across a specimen of the Regal Moth at arc lights. Here among the myriads of other insects that are attracted to these glittering lights, like the "moth and flame" of song and story, we sometimes find a battered and forlorn remnant of what had once been a "Regal."



THE LARVA OR CATERPILLAR OF THE PINE CITHERONIA



THE ADULT STAGE OF THE PINE CITHERONIA (*Citheronia Supulchralis*), A ROYAL MOTH THAT RANKS AMONG OUR RAREST INSECTS



BOLD, RUGGED AND MAGNIFICENT THESE ISLANDS RISE FROM THE SEA—FOREST COVERED, MOSS CARPETED. BEAUTIFUL IN MANY WAYS BEYOND COMPARE IS THIS LAND IN NORTHWESTERN SUPERIOR

Isle Royale

An Unspoiled and Little Known Wonderland of the North

By ALBERT STOLL, JR.

LIKE a great uncut emerald nestling in the crown of the largest of our inland lakes, lies Isle Royale; a forest-covered, moss-carpeted mass of gigantic rocks, some 132,000 acres in extent. It is an impressive reminder of a terrific volcanic upheaval the like of which has brought to us so many of the picturesque land and water formations we have fallen heir to. Unlike many other physical show-places of America, Isle Royale is yet to be discovered, appreciated and enjoyed.

There is nothing like this virgin, unspoiled island, safely anchored to its rock foundation in Northwestern Superior and the full meaning of this will never be un-

derstood until you have journeyed to its wave-washed shores. Isle Royale is different, it is bold, rugged and magnificent. Eighteen miles to the north lie the guarding islands of Southern Canada. To the west, 17 miles away, the horizon bends down to touch the forested shores of Minnesota and 55 miles southeast, over turbulent, uncertain waters, one enters Copper Harbor, the last northern harbor of refuge in Upper Michigan. From Passage Island Light, at the extreme northeastern end of the island to the Rock of Ages



A NATURAL WILD LIFE SANCTUARY, THE ISLANDS ON THE NORTH SHORE SERVE AS ROOKERIES FOR INNUMERABLE HERRING GULLS

Light, three miles off the southwestern shore is a distance of 52 miles but the total length of Isle Royale

not including the outlying islands, is reckoned at 45 miles. Its greatest width, through what is known as the Siskowit district, is nine and one-half miles. Although no accurate count has been made it is estimated that there are well over 200 small islands that help form the main group. The outlying islands on the north shore, all barren of trees or other vegetation, serve as rookeries for innumerable colonies of herring gulls.

With the exception of a small fire scar on its south shore, the interior of the island is heavily forested

1,500 during any one season. These pleasure seekers reach the island from Duluth, some 150 miles to the south and west. At the west end is found Washington Island upon which is located Singerville resort, catering principally to residents of Minnesota, Wisconsin, Illinois and Iowa. A few miles to the north, hugging the only large clearing on the island, is the site of the

Washington Club, a private organization. Between this point and the extreme eastern end of the island civilization disappears entirely, except for a few hardy Norwegian fishermen. In Rock Harbor, large enough to hold the greatest steamer afloat, is the Rock Harbor Lodge, a public resort. In Tobins Harbor lying a few miles north in a secluded harbor of its own is another, while around the channels leading to the extreme northeastern end of the island is Belle Isle, still another resort. Because of the late start in Superior navigation and the early closing of lake ports the resort season upon Isle Royale extends from May 15 to the latter part of October. Navigation to and from the island ceases entirely during the winter, and, from December 15 until the ice goes out, the island is completely cut off from communication of any kind with the mainland or outside world except through radio.

For the past few winter seasons the State of Michigan, to which Isle Royale belongs, has maintained a

game warden upon the island to trap wolves and smaller predatory animals. His work in this direction is about completed for the breeding stock has been practically eliminated and there remains no great danger of migration of these animals from any part of the adjacent mainland, thanks to the wide expanse of open water or ice that must be traversed.

The fauna and flora of Isle Royale, stand perhaps without parallels in the United States except in Alaska. Where in the States could one find thriving, contented herds of roving woodland caribou? Their introduc-



FISH AND GAME ABOUND IN THIS FAIR, FAR ISLAND COUNTRY OF SUPERIOR—TRULY ONE OF AMERICA'S SHOW PLACES



"A LODGE IN THE WILDERNESS"

with balsam fir, spruce, white cedar in the lowlands and hard maple, birch, poplar, some white and Norway pine upon the ridges and high ground. A cruise of approximately 70,000 acres of the island five years ago revealed over nine million board feet of white pine and twenty-five million feet of birch and maple. The woodman's ax has not penetrated much of this interior land. What lumbering has been carried on was during the days preceding the Civil War, when copper mining operations in four parts of the island made slight inroads for mining timbers. Since that time practically no timber has been taken out and because of the isolation of the area fire has not exacted its toll.

Although inducements, in the form of four resort hotels and one private club, lure a few summer tourists to Isle Royale, the number has never exceeded



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tion to the Isle Royale habitat is shrouded in mystery and uncertainty. There are those however who have accepted the theory that in years past these splendid game animals migrated from Southern Ontario to the island at some time during the winter period when ice formed solidly from the mainland across Superior. Whatever their origin, they are there and increasing in number annually. Two years ago we photographed a cow caribou with twin calves in the marshy wastes of MacCargoes Cove, a stamping ground for moose and caribou. Those who later viewed the photographic results were skeptical of this parental possession for twin caribou are considered more than a rarity. There must be hundreds of caribou but no official census has been made that approaches accuracy.

The evidence of moose throughout the entire island leads most of Michigan's conservation officials to believe that their numbers exceed 2,000. Certainly wherever one travels (and one can only travel via moose paths or runways for there are no man-made roads or trails in this rugged country) the hoof prints and discarded antlers of moose are abundant. The banks of the inland streams are beaten down like barnyard pastures and the submerged aquatic vegetation speaks plainly of meal time. Hunting big game has been tabooed on Isle Royale since the animals were first discovered, with the result, that viewing them at any time of day is one of the pleasures of the wood's wanderer. Last year to further protect this bit of vanishing wild life, Michigan declared the island a game reserve and all firearms are now rigidly excluded.

In addition to moose and caribou, a few Virginia white-tailed deer have been placed here by conservation authorities. The herd, a small one in the beginning, has now increased splendidly but their numbers cannot be even estimated.

The last of Michigan's sharp-shinned grouse are here. Although not numerous, the scarcity of predatory animals and the abundance of food should aid in their perpetuation.

A fairly complete survey of the inland habitats has failed to disclose any evidence of black bear, porcupines, foxes or skunks, although mink, beaver and muskrat abound.

In two remote sections of Isle Royale, one along the northern shore, the other in the south Siskowit Bay district, there have been uncovered mining operations of ancient times.

How far back into our history these go, no one has been able to determine. In the Old Minong workings, near MacCargoes Cove, great piles



A PERFECT WILDERNESS AREA, ONE MUST TRAVEL VIA MOOSE PATHS OR RUNWAYS, FOR THERE ARE NO MAN-MADE ROADS OR TRAILS IN THIS RUGGED COUNTRY



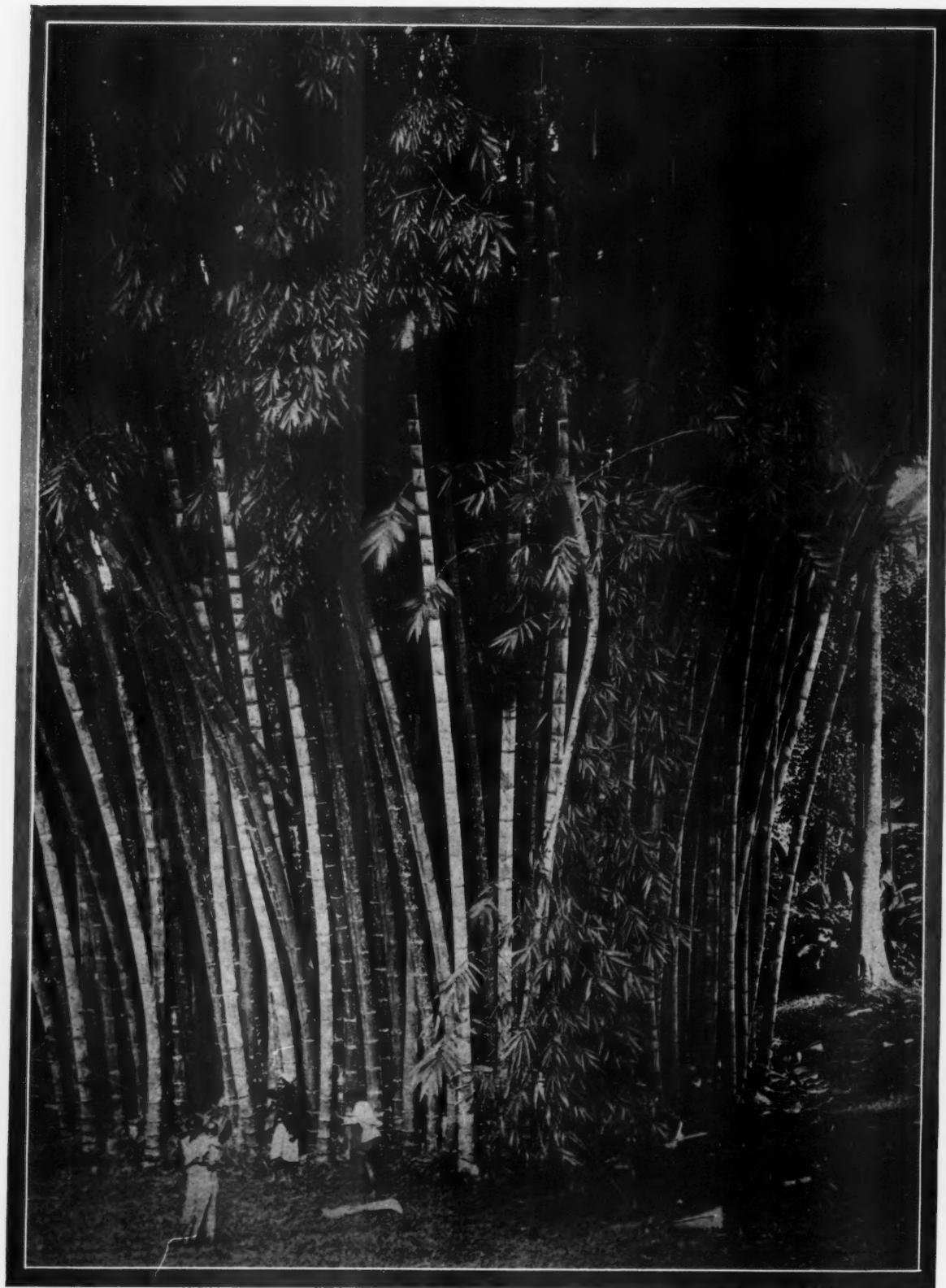
REMOTE FROM THE BUSY WORLD, STRENGTH AND REST ARE TO BE FOUND IN THIS IDEAL VACATION LAND

of stone hammers, crude fashioned stone steps leading to the water's edge and other stone implements have been uncovered. Whether these represent the operations of ancient white men or begin with their Indian antecedents is unknown. There is much to be done in research here and the field is fertile and untouched.

Much could be said of the beauty of the island's flora but to say that it is typical of that of northern Ontario would best explain it to the novice. The coloring of the wild flowers, the many varieties of cypripediums and other rare plants is surprising and delightful. There are certain extensive patches where ginseng, three to four feet high covers the ground.

In 1924, Stephen T. Mather, Director of National Parks, together with other Washington and State officials, paid a visit to the island to judge its caliber

(Continued on page 512)



Underwood and Underwood

THIS IS CLAIMED TO BE THE WORLD'S MOST MAGNIFICENT CLUMP OF BAMBOO TREES AND IT IS FOUND
AT PERADENIYA, CEYLON

Why Not Bamboo?

By R. S. HOWLAND

BAMBOO is to the natives of India and the Malay Archipelago what white pine has been to the American farmer. It is their building material; it is their furniture; it forms their kitchen utensils. In fact, the Malays go the Americans one better, and have an edible variety of their favorite building material, for bamboo is considered one of the most nutritious vegetables in those regions.

"But what," I can hear you say, "has the Malay native's use of bamboo to do with us, who prefer houses and furniture made of real wood, and who have not yet come to look upon bamboo as an article of diet?"

Well, in the first place several millions of bamboo fishing poles are imported each year because the American angler demands them. Still more canes of varying size are shipped in, because the middle class housewife must have something to hang her curtains on. And our fans, fire screens and porch furniture, together with a score or more of common household appliances are imported yearly—and incidentally United States money exported—because we in America have not yet seen the possibilities of growing our own bamboo.

Yet commercial bamboo, contrary to popular opinion, is not a distinctly tropical plant. It is sufficiently hardy to stand a temperature of 6° Fahrenheit without deterioration, and has been known to survive zero weather. This is significant because in the 50,000,000 acres of cut-over

lands south of latitude 31° it would rarely encounter this low temperature.

While bamboo does not yield such prompt money returns as do grains, fodder and some forest trees, it is a commodity for which constant demand is assured. Among the reasons for its adoption we find the most cogent to be its use for paper pulp and building material.

France is actually using bamboo in the paper mills at Dan and Vietri, and is taking definite steps toward the commercial cultivation of bamboo in her Colonies. Russia, though still in a tremulous condition economically, is spending men and money on bamboo culture, while the fact that bamboo is so systematically cultivated by the Chinese and Japanese—the most practical

agriculturists in the world—would seem to indicate the definite value and usefulness of the crop.

The Russians have foreseen the great commercial possibilities of the timber bamboos of the Orient, and have started a grove of considerable size at Chakva in the Caucasus. New methods of steaming the bamboo poles under pressure have been devised, and a demand far exceeding the supply has



Frank N. Meyer

A NEW BAMBOO GROVE IN THE CAUCASUS

Established by the Russian Government because of its realization of the great commercial possibilities of the timber bamboos of the Orient. This grove is at Chakva, in the Caucasus.

sprung up for irrigating pipes, telegraph poles, scaffolding material, ladders, and furniture.

Because we see only the dried bamboo manufactured into a number of common articles, it is difficult perhaps for us to realize the multitudinous uses to which

the green uncurled bamboo can be put. Yet those who have seen it in use in Japan and elsewhere believe that it can be made a common plant among American farmers in the southern and Pacific states.

The number of uses rivals that of the palms. In fact the various species can be utilized for man's every purpose. The light, elastic hard stems are used for bridges, waste, poles, joists, fishing rods, etc.; when the partitions are removed, for water pipes; when sawed in sections, for pails, cooking utensils, life preservers, bows, arrows, quivers, walking canes, flutes and smoking pipes; when split, for nets, hats, fishing rods, wicker-work and umbrellas. Parts of the leaves of some species are used for paper-making, thatch and hats; the young shoots of some are used as food, either boiled or pickled; the seeds, for food and for making a kind of beer; some of the spiny species are even planted as hedges for defense against foes, animal and human.

Bamboo is extensively used as timber wood, and houses are frequently made entirely out of the products of the plant. Complete sections of the stem form posts or columns. Split up, it serves for floors and rafters, and, interwoven in lattice-work, it is employed for the sides of rooms, admitting light and air. The roof is sometimes of bamboo solely, and when split, which is accomplished with the greatest ease, can be formed into laths or planks.

A modern American improvement in bamboo building is that of filling the hollow stems with concrete, ensuring a weightier and more permanent building that combines the advantages of cheapness with beauty and durability.

The first grove of any size to be established in the United States is that set out by Mr. William Tevis, of San Francisco, at Bakersfield, California. Mr. Tevis bought a single plant of the Giant Japanese bamboo from a Japanese nurseryman in San Francisco about twelve years ago, and from this single plant has grown a grove which is so strikingly beautiful that those who have seen it declare it to be one of the most fascinating things in the country.

Yet in planting a warning is necessary against the common ornamental varieties of bamboo, which, in addition to having no commercial value, have the bad habit of spreading underground and sending up shoots in unexpected places many yards from the main plant; often these shoots start up in the midst of other shrubbery and soon destroy it. Because of its hardy nature in temperate climates it becomes a veritable pest in Florida and other semi-tropical sections.

The bamboo of Bengal (*Bambusa Vulgaris*), a variety suitable for commercial use, is admirably adapted to the soil and the climate of Florida, it has no bad habits, is easily cared for and propagates systematically and controllably.

This variety forms symmetrical clusters, which increase regularly by the addition of new stems on the

outside. It has none of the erratic ill-behavior of the *bambusa violacea* which spreads by leaps and bounds and sends up destructive shoots in the heart of the neighbor's crops.

Propagation of the plant may be made by cuttings of the stem or by taking off sets from the roots in early summer, when one of the large buds surrounded by its rootlets may be separated from the mass.

Though a plantation of this variety has been under cultivation near Crescent City, Florida, for 15 years, its seed has never been produced. Propagations are made by roots or cuttings off the stem.

The quality of bamboo varies greatly with the kind of soil on which it is grown. To produce a strong tough wood two elements, potash and phosphoric acid are necessary. In the cultivation of edible bamboos a light sandy soil is more suitable than that recommended for timber growth.

Though not altogether resistant to drought bamboo is not so dependent on atmospheric moisture as is commonly supposed. Once the plant has roots that reach down about four feet and are well embedded in the clay subsoil, a very moderate rainfall is enough to keep the plants in a flourishing condition. The care involves slight expense. However, a good deal of difference exists in the method of cultivation between various species.

The land to be planted should be dug to the depth of one and one-half feet *the previous autumn*. Early in the spring the plants should be set out about 12 feet apart each way, giving about 300 plants to the acre. If the soil be dry the roots should be planted well below the surface; if it be wet a mound should be made and the plants set in this. The ground should be manured and between the plants should be covered with straw. For the first three years shoots should be allowed to mature. After that only large, healthy shoots should be left, the others being cut out as fast as they appear. Only by doing this is the strength of the forest increased.

The wood matures in about four years, and when mature should be promptly cut; for if left standing it deteriorates for commercial purposes and becomes brittle and unworkable. It is also likely to injure the new young shoots.

Strictly timber bamboo, even twenty years ago, yielded from \$20 to \$40 gold per acre in Japan (Kyoto); a grove from which both timber and edible bamboo were obtained yielded \$50 per acre, of which 20 per cent was from edible shoots. Edible bamboo in Japan yields a higher average of profit per acre than timber bamboo—one grove brought an annual profit of \$90 on land that, cleared of bamboo, would have sold outright for \$80 per acre. It is possible that the relative values of the timber and edible varieties would be reversed in the United States.

Yields vary from \$30 to \$40 per acre, according to the species and the care in harvesting, upon which

the quality of the market product largely depends.

No very recent figures on bamboo culture are available, though it seems certain that the crop yields a profit well worth the American farmer's investigation.

The harvesting is not an expensive matter. It must, however, be reckoned on a time-labor basis which will differ materially not only in different states but even in different counties. It seems reasonable to look forward to highly satisfactory returns from American groves on lands not suitable to general forestry or farm crops, or to lands that have been cut over and now lie waste. It is not generally known that bamboo is imported into Europe and America as a paper material. Director Barbillion of the Grenoble School of Paper Making, writes that of all the available plants and grasses, bamboo is the only one for the treatment of which a business complete in itself has been established.

One of the great obstacles at present to the commercial use of bamboo for paper is that the two hundred or more species are very often found mixed in the bamboo forests, and are not easily distinguished. Inasmuch as the conditions of chemical treatment differ with the species, this is a serious drawback to the use of existing groves. Any difficulty from this source how-

ever would be avoided in the establishing of groves in the United States by planting only such species as are suitable for paper making.

The age of bamboo is an important factor in its value as paper pulp. In groves established for this

purpose, careful records would ensure reliable information in this regard and would result in a dependable quality of raw material of the proper age. As it is, the age must now be guessed approximately for bamboo does not register uniform growth by rings and the quality of the raw material varies within wide limits.

It was at first thought necessary to cut bamboo while green, but experiments have proved that if the plant is allowed to die and dry, the stems give a better yield.

The process of cutting the stems and removing the knots by means of circular saws has given way in some measure to the new process of crushing the stems, knots and all by means of machines, and so transforming the canes into a coarse fibrous mass. The circular saw method was wasteful in the extreme, since the knots were often so close together as to reduce



P. H. Dorsett

THE TEVIS BAMBOO GROVE

Established at Bakersfield, California, this is the first grove of any size in America. Mr. William Tevis bought a single plant of the "Giant Japanese Bamboo" from a Japanese nurseryman in San Francisco about twelve years ago and from this single plant has grown this grove, so strikingly beautiful that many who have seen it declare it to be one of the most fascinating things in our country.

the usable part of the stems enormously. It was also costly both in time and labor. The new method on the other hand is not entirely free from disadvantages,

(Continued on page 512)

The Spirit of the Pines

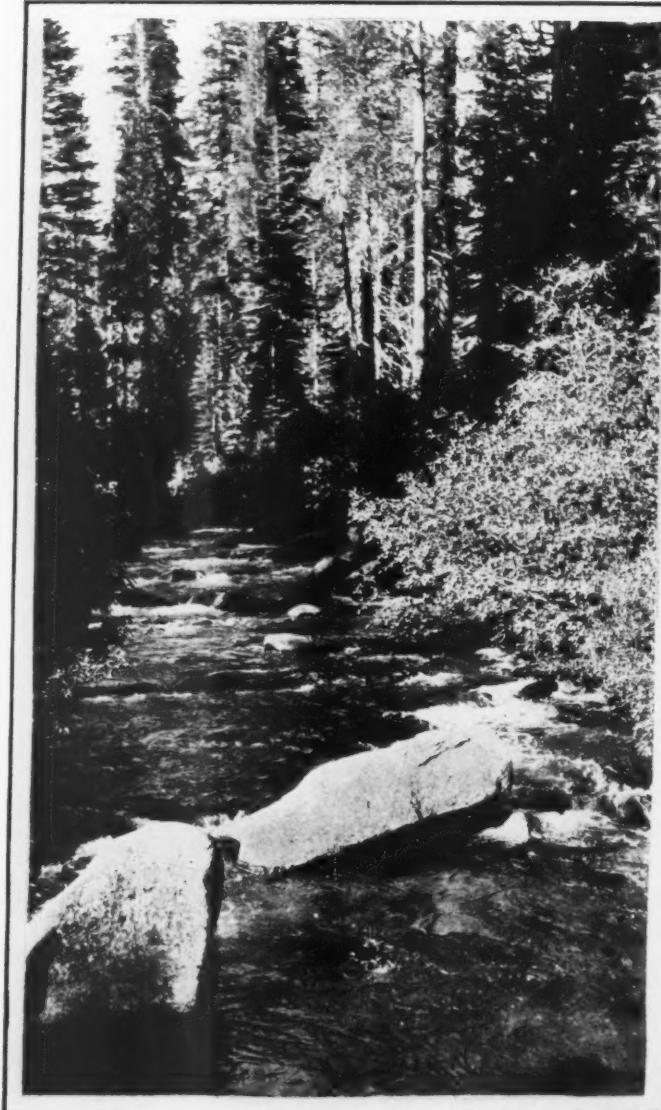
By *W. E. HUTCHINSON*

I AM the spirit of the pines. I make my home in the forest where the soft winds sigh through the branches like an aeolian lullaby. I am the friend of all the feathered tribe from the tiny humming bird to the hermit thrush, that prince of troubadours, who seeks the topmost branches to sing his Te Deum to the rising sun. I invite them to make their homes amid the branches, where they are rocked to sleep in their swaying cradles.

I am in my element when the storm rages, when the wind howls like a banshee through the forest, and the mighty pines sway like mortals in agony, and clash their arms together as they bow obeisance to the storm. When Jove hurls his fiery javelin across the sky, and the thunder rolls like artillery in battle, I laugh at the fury of the elements, for the pines and I do not fear.

At night I hover over the campfire when the day's catch sizzles in the pan, and coffee bubbles in the pot, and the shadows cast by the campfire are like ghostly warriors.

The margin of the lake is my mirror in which is reflected the trees that grow on its edge; the ripples dance and laugh at the caprice of the winds sending the tiny waves scurrying to shore as if to seek protection under the shadows of the sheltering pines. The laughter of the mountain brook is music to my ears as it dashes in mimic



fury over the waterfall, or chuckles in glee as it swirls around the rocks where the shy trout hide.

Cicadas tune their tiny violins for the evening concert; crickets and locusts join the chorus, and the air seems to vibrate with the music of these little musicians making a fitting accompaniment to the aria sung by the white-crowned sparrow amid the gloaming. The stars peep out from behind the fleecy clouds like incandescent lamps, to light the way for pixies and gnomes to dance by in the moonlit glade.

At times I leave the forest and on the wings of the wind I travel over valley and mountain, and enter the private office of the business man; seek out the clerk

at the counter, and invade the study of the minister of the gospel, and whisper woodland secrets into willing ears. I tell of cool retreats and shady nooks where the split bamboo rod casts the brown hackle or silver doctor skittering over the waters. I beg them to follow where I lead and partake of the healing balm of mother nature; to forget the worry and cares of business, and revel for a time in "God's out of Doors." I help them break the bonds that bind them to their tasks like galley slaves, and all, from the least to the greatest listen to my voice, that is like a voice in a half forgotten dream, and respond to the seductive call of the "Spirit of the Pines."



A GENERAL VIEW OF THE MONUMENT—STRANGE RELIC OF A FORMER CIVILIZATION

Stonehenge on Salisbury Plain

A National Monument in England That Sets a High Standard for America

By FRANK A. WAUGH

ENGLAND has an "Ancient Monuments Protection Act" dating from 1882. Operations under this act suggest very clearly the system of National Monuments as it has developed in the United States. It is a close analogy, therefore, to compare Stonehenge on Salisbury Plain in Southern England with, say, the Bandelier National Monument near Sante Fe. In both cases modern civilization is endeavoring, after inexcusable delays, to preserve the relics of a former civilization. In both cases the ancient races have disappeared, though the origin of Stonehenge, the story of its makers and the knowledge of their culture, have much more completely vanished than the people who built Tuyoni.

Stonehenge in fact is prehistoric in the strictest sense. At the present time there is nothing but vague guessing as to what race built this strange temple, or when or why. The theory commonly held in recent years that this was a temple of worship built by the Druids seems to have been abandoned by modern scholars. The story did not originate till about 1732; and the best recent estimates indicate that though Stonehenge may have indeed been used by the Druids, the temple

was in their time at least half as old as it is now. As good a guess as any is that it was built about 1700 or 1800 B. C.

Not until September 15, 1918, did it come into the possession of the British government, being presented by Sir Cecil Chubb who bought it at public auction for £6,000. In 1920 some protective and restorative work was carried out, and careful studies are still being conducted by the Societies of Antiquaries, paralleling again the archaeological work done at Bandelier National Monument and Mesa Verde National Park.

Stonehenge is evidently a great temple set on a low rounding hill on Salisbury Plain in an open agricultural country. It consists of great stones set in several concentric circles. The most impressive group or circle was made up of five trilithons. Each trilithon consisted originally of three huge stones, two upright with one horizontal member mortised and tenoned across the top. In the great trilithon this horizontal impost was 15 feet long and stood 21 feet above the surface of the ground. The upright stones supporting it were one 25 feet and one 29 feet tall. In order to equalize their

height one was sunk 8 feet into a foundation pit, the other only 4 feet. How these enormous posts were thus erected and the impost, with its mortises, laid upon them, offers a delightful problem upon which today's engineers may speculate to their heart's content. The relics found in the vicinity imply that the builders had no metal tools. Only two stone hatchets, some stone mauls and digging tools of reindeer horn have been discovered.

The outer circle of stones in the temple consisted of 30 upright posts 16 feet high, each having two tenons fitting into the mortises of 30 horizontal pieces, thus forming a sort of circular portico 108 feet in diameter. Just within this circle was another, 90 feet in diameter, of much smaller stones only 6 feet high. At the center was another small circle of standing stones about 8 feet high. A circular earth work with a diameter of about 300 feet appears to have surrounded the whole.

Enormous as were the labors of erecting the great stone trilithons, the engineering mystery of Stonehenge is multiplied by the fact that many of the stones, though not the largest, were brought from great distances. Some of them seem to have come even from the continent of Europe; but the principal importations came from the Prescelly Mountains in Pembrokeshire—at least that is the present belief, apparently pretty well established. This means that the huge stones averaging about two and one-half tons in weight, were brought a distance of 180 miles overland, or else 100 miles by land and 75 miles by sea. How? Well, that's the riddle. Rather it is one of the many riddles of Stonehenge.

Stonehenge is by no means an isolated structure. The country round about is overflowing with prehistoric monuments, though unfortunately very few of them are adequately preserved. For example, at Avebury is another double circle of upright stones, with a surrounding bank and trench, much larger in area and estimated

to be 1,000 years older than Stonehenge, but much less impressive in its architectural character.

Much more could be told of Stonehenge, of antiquarian speculation, historical record or literary reference; but what strikes the average intelligent visitor is the stark simplicity of the monument, the great dignity of the architecture and the compelling bite upon the imagination. One may find here ample room to give his imagination a soaring flight. And as the imagination is probably the most precious organ of the human mind, the temple of Stonehenge serves the purposes of all the greatest art.

Some leverage is given to the visitor's fancy by the proximity of Salisbury Cathedral, one of the greatest of modern temples. Salisbury and Stonehenge are almost certain to come into a stranger's experience on the same day. Comparisons are inevitable; and they may well be more fruitful than odious. We who may stand today in the great nave of Salisbury and thrill to the sweetly intoned service would gladly speak a word across the centuries with our distant forefathers who celebrated their solemn ceremonies in Stonehenge.

As one stands on the swelling downs and views the beauty of the pastoral English landscape, the fields of yellow grain, the flocks of grazing sheep, the half-hidden little villages in the valleys, and against this background sees thrown up the mighty shafts of Stonehenge, reminders that this same land has been loved and cultivated by his fellowmen for over three thousand years, and that these earlier brothers also worshipped God together, he is certain to have more reverence for the past, more joy in the present and higher expectations for the future. And any memorial which can evoke these sentiments is a national monument in the highest and most spiritual sense. I came away from Stonehenge, turning back for a last far look and wondering how many of our American national monuments can measure up to the same high standard.

An Invitation to Sesquicentennial Visitors

If you're visiting the Sesquicentennial Exposition why not make your headquarters the booth of The American Forestry Association? It is centrally located in the east wing of the Palace of Education and close to both the North and East entrances.

Have your mail sent in care of The American Forestry Association exhibit. It will be received and held for you by the attendants. They will be equally glad to furnish information regarding hotels, train schedules or the Exposition itself.

Preserving American Antiquities

The History and Romance of Early America is Vividly Recorded in our Southwestern National Monuments

By EDNA TOWNSLEY PINKLEY

BACK in 1906 the President of the United States was authorized to set aside by proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest upon the public domain to be national monuments. Of these, the military landmarks are under the administration of the War Department, those falling within the National Forests are under the Forest Service, and all the rest are in the jurisdiction of the Department of the Interior, and directly under the National Park Service. Of these eighteen are grouped as the Southwestern National Monuments with Frank Pinkley as Superintendent.

In this group are some of the most interesting physical phenomena, historic relics and prehistoric remains on the American continent. They are scattered over Arizona, New Mexico, Southern Colorado and Southern Utah and range in point of time from the Petrified Forest, formed a matter of tens of millions of years ago, through geologic ages, prehistoric and historic days, down to Pipe Springs which dates only from the days of the Mormon pioneers some sixty years ago.

If we visit these National Monuments in their geographical order rather than chronologically we will begin with the Tumacacori Mission 18 miles north of Nogales, Arizona, on the Mexican border. This early Spanish Mission, built a hundred years before Padre Serra landed on the Pacific coast, is one of the most beautiful missions in the United States. With an

air of calm serenity it watches changes come and go about it. It was here in 1691 that Padre Eusebio Francisco Kino coming up from Sonora, gathered the Indians together under a green ramada and held mass for the good of their souls. The building now standing is the third erected on this site and was adjoined by a large plaza surrounded on three sides by buildings and cloistered porches and on the fourth by a walled garden in which grew luxuriantly many varieties of fruits and vines. The Mission itself had a long narrow nave with choirloft at the rear, altars and niches for statuary at the sides, and in the sanctuary, an altar surrounded by elaborate frescoes. This building was never entirely completed but was finally abandoned about 1830 when the secularization of the Missions took place.

The Monument next in order is the Casa Grande, or Great House, near Florence, Arizona. When Padre Kino, founder of the Tumacacori, made one of his visits to San Xavier del Bac near the present site of Tucson, he heard from Indians there of a Great House on the banks of the Gila a day's journey away. Going over to see this wonder he was great-



Tom Gill

WHERE ANCIENT RITES WERE ONCE PERFORMED

This impressive scene was taken in a ceremonial chamber of the Cliff Dwellers, in the Bandelier National Monument in New Mexico.

ly impressed, and in his memoirs he leaves the account of his visit in 1694, the first record of any visit of a European. Several years after, Padres Garces and Font made a visit to the Casa Grande and held mass within the walls. From this time on occasional visits of explorers and soldiers have been recorded and in



TUMACACORI

Clemens Studio

This beautiful old Spanish Mission has been rebuilt three times. It was here in 1691, that the good fathers gathered the Indians together for the good of their souls.

1889 it was set aside as a National Monument.

This eleven-room building, the only one of its type with walls still standing in the United States, is built of caliche piled up, course upon course, over four feet thick at the base and rising four stories above the desert level. It was the dominating building in a village of several hundred rooms, one village of many in the Gila River valley. Built by an extinct race of Indians known to the local Pimas only as the Hohokam, or vanished people,



GRAN QUIVERA

Frank Pinkley

Here the lines of history are lost in the dim past. This view is looking from the sacristy into the church. The light line running through the picture indicates the ground line before excavation revealed the complete ancient structure.



EL MORRO

Rising like a great old castle from the plain, this huge sandstone cliff bears the carved name or mark of many an old Indian warrior and early Spanish explorer, dating back before 1606.

house is built in a natural recess in the face of the perpendicular cliff. There is evidence to show that at one time another cliff dwelling of even greater size was built in a nearby part of the cliff and later destroyed by the slipping of the rock. This must have been to the remaining cliff dwellers sufficient evidence that the gods disapproved of this location and probably at this time the Castle was abandoned.

The next monument to the north is Wupatki, our most recently formed Monument. Wupatki is on the Little Colorado River and consists of two tracts of land where are located

it has withstood centuries of storm and pillage. Artifacts found through years of research work make a museum display here of much interest.

Driving west and north from the Casa Grande one passes through the Papago Saguaro National Monument. This Monument was reserved for its representative desert scenery and vegetation, and when all the desert shall be irrigated and shall blossom as the rose, this Monument will remain virgin desert.

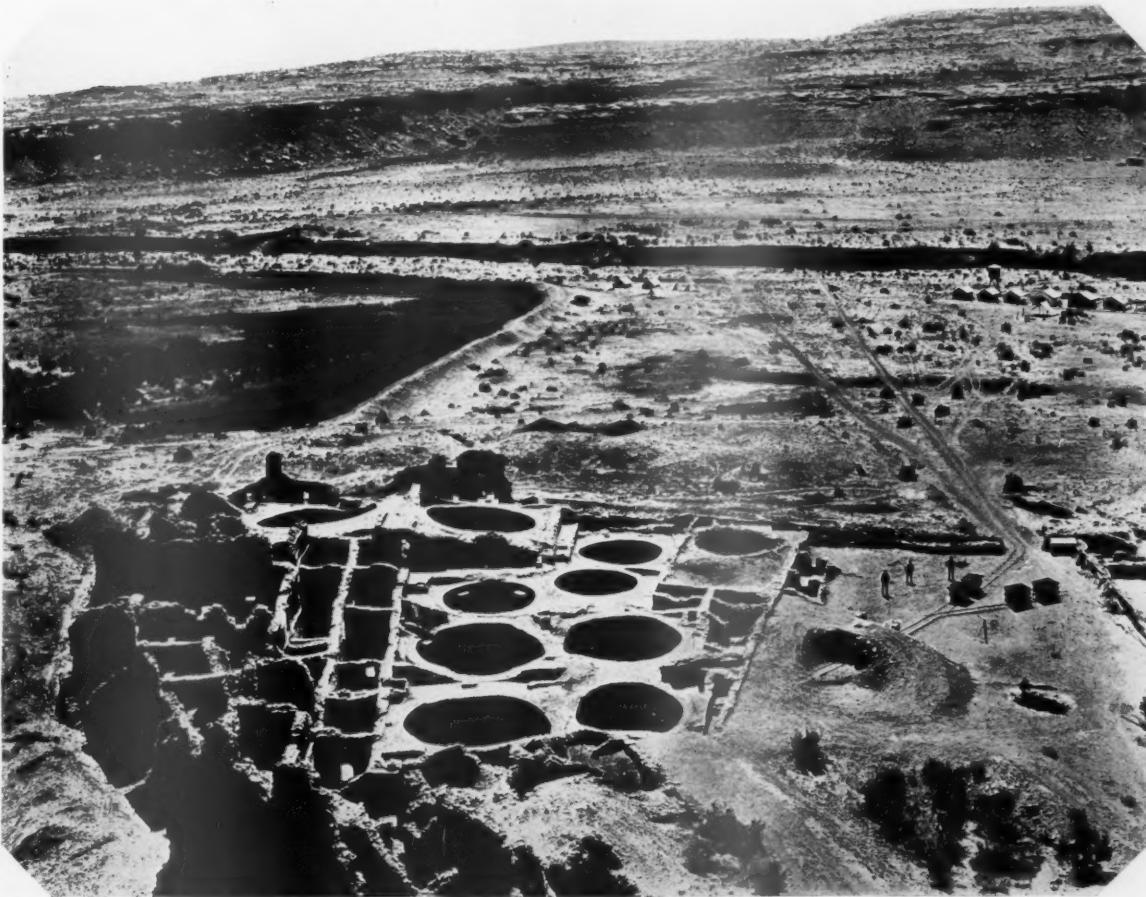
Montezuma Castle National Monument lies north of the Papago Saguaro and some sixty miles east of Prescott, Arizona, and is the most easily accessible cliff dwelling in the country. Detouring only about a mile on well-graded road from the main highway a motorist can drive to the very foot of the ladders which scale the cliff to the door of the Castle, eighty feet above. This four-story twenty-four-room

ruins of the habitations of ancestors of the present Hopi Indians. According to Hopi traditions these buildings, many of them containing as high as twenty rooms, were built by the Snake clan.

Far up on the desert in the Navajo Country north of the Santa Fe and east of the Grand Canyon lies the Navajo National Monument, three very large cliff dwellings separated by some miles from each other. Kit-sil (broken pottery) is the largest of the three, having 148

an exploring party.

Coming back down to the Santa Fe trail we visit the Petrified Forest. The name is misleading, for there is no standing forest of petrified trees with petrified birds singing petrified songs but rather a tangle and jumble of petrified tree trunks scattered about in profusion. The Rainbow and Third Forests at Monument headquarters are noted for their beautiful coloring, the Second Forest for the length of the logs, while the First con-



Photograph by Neil M. Judd, © The National Geographic Society and reproduced by special permission

PUEBLO BONITO, IN CHACO CANYON

In this Monument we have indeed a priceless record of the past, for in the Chaco are forty major ruins and nearly a thousand minor ones. The masonry in these buildings is of several different periods and is the most beautiful prehistoric masonry in the world. This shows the excavated Southeast section of the Pueblo Bonito at the close of the 1922 season when the work of excavation was under way, seen from the north cliff of Chaco Canyon. This ruin alone has over 700 rooms and 32 kivas. Note at the lower right-hand corner the men directing the work, and the steel dump cars used in depositing the debris.

rooms, and broken pottery of the finest type scattered everywhere. Lit-sil is the only one of the three to have kivas, or semi-subterranean ceremonial rooms, which indicates that it was built by a different tribe. Betatakin (side hill house) is well named, for these houses are not built in the face of a sheer cliff as was Montezuma Castle, but are built instead under the overhanging cliffs and at the top of a high talus or slope of detritus. Inscription House was so named because of a Spanish inscription which was discovered on an inner wall by

tains many logs just emerging from their age long burial. These logs were once growing trees, in the days when the world was young, growing in some far country. Either by glacial action, storm or flood they became uprooted and were borne on the crest of a raging river, where branches, roots, and leaves were ground off in troubled progress over many miles. At last they came to rest floating on the then surface of an inland sea, presumably a sea strongly impregnated with boiling mineral waters. Here, the pickling process went for-



THE HOVENWEEP NATIONAL MONUMENT

Just on the line between Colorado and Utah lies this interesting group of stone towers. The largest of the ruins is called Hovenweep Castle and contains two kivas in addition to its towers and rooms. Note the splitting of a rock on the opposite side of the canyon which has caused the division of one of these ruins, but remarkably each portion still maintains a perpendicular position to the base.

ward as the logs gradually sank to the bottom of the sea to be buried beneath several miles of earth where through other countless ages they were compressed by this tremendous weight until many of the cross sections show that they had been forced out of shape. Again with eternal deliberation, the earth's crust rose, cutting the gash called the Grand Canyon and eroding several thousands of feet of overlying strata, thus exposing the petrified logs over an area thousands of acres in extent. The marvelous process of petrification was carried on with such perfection that microscopic slides show plainly the cell construction of the original wood.

Down in south central New Mexico is another National Monument reserved for scientific interest. Here is situated

Carlsbad Cavern on the edge of the Guadalupe Mountains. This marvelous cavern rivaling both in size and

in beauty all known caverns, had been masked for years by its entrance room, which was known as Bat Cave and used for strictly utilitarian purposes. Only in the last few years did the fact that there was a beautiful and extensive cavern behind this unsavory opening become known. Exploration so far carried on reveals a cavern of immense size and surpassing loveliness. The largest room so far discovered is known simply and fittingly as the Big Room, and is more than half a mile long and 400 feet wide in its widest part. It is over three hundred feet high in places and is filled with stalactites and stalagmites of infinite variety and



Glen A. Smith

MONTEZUMA CASTLE
This Monument in Arizona is the most easily accessible of the cliff dwellings. The motorist can drive to the very foot of the ladders scaling the cliff to the Castle, eighty feet above.

many variations of delicate coloring. Pools and fountains, curtains, screens and spires add interest to every step.

Up in central New Mexico is the Gran Quivera National Monument, a place where the historic and the prehistoric overlap. Here in 1628 the Spanish Padres established a mission to the Piro Indians who had lived in the pueblo here for uncounted generations. The Fathers with the aid of the Indians built a church at this time and worshipped here for some years. The church proved too small after a time and in 1649 the "new church" was built. Benevides says that the work on this building was done entirely by the women and children, the men considering such tasks beneath their dignity.

In Northeastern New Mexico, near the little town of Capulin, is the Capulin Mountain National Monument, a striking example of a recently extinct volcano. Indeed indications still point to some slight activity about this volcano, as there is a small area near the base where the snow does not lie in winter even when the ground is covered in other places and here in spring the grass is green long before green shows elsewhere.

El Morro about forty miles south of Gallup is a huge sandstone cliff rising from a lava strewn plain, which has somewhat the appearance of a castle. This rock was on the old Zuni-Acoma trail, and on its smooth face many a passing Indian warrior carved a pictograph which might well be a signature. Following this trail in later years came the early Spanish explorers who rested here in the shade of the trees and refreshed themselves and their horses at the pool which was always brimming with clear cool water. Here as he sat resting it was a natural sequence for a doughty soldier to pull his stiletto from his belt and carve his name and exploits on this bulletin board. Don Juan de Onate, first governor of New Mexico, left a record of his visit here in 1606, and from that time up to 1776 we find name after name. In 1776 the signatures abruptly cease. The simplest explanation is that about this time ox carts were introduced into the southwest and these *carretas* could not travel over the narrow trail worn in the lava, but were obliged to take a longer route.

North of Gallup some hundred miles is Chaco Canyon National Monument. Here in the Chaco are forty

major ruins and several hundred, perhaps a thousand minor ones. The largest ruin is that of Pueblo Bonito with over 700 rooms and 32 kivas but Chetro Kettle, Pueblo del Arroyo, Pueblo Alto and Pueblo Pintado press closely for honors. The masonry in these buildings is of several periods, and is the most beautiful prehistoric masonry in the world. In many cases stones are used which are not so large as a dollar, and are so closely laid that one can hardly find a crevice. Pueblo Bonito, it is probable, has been abandoned for a thousand years. It was probably about that long in building and occupancy. Just recently ruins of buildings of even an earlier period have been discovered beneath this pueblo.

North of the Chaco Canyon and just south of the Colorado border is the Aztec Ruin National Monument. Nearly five hundred rooms make up this pueblo and in twenty-eight of the first floor rooms the ceilings are intact. These ceilings are made of straight cypress limbs supported by huge beams dressed

by stone tools. A great kiva is a feature of this ruin.

Turning to the west from Aztec we come to Yucca House, near Cortez, Colorado. This Monument is of importance archeologically, but might prove somewhat disappointing to the average visitor, since it now lies in the form of huge mounds with no standing walls. When funds are available for excavation interesting results will undoubtedly be shown.

North and west of Yucca House, just on the line between Colorado and Utah is Hovenweep National Monument, a group of interesting stone towers on Ruin, Hackberry, Keely and Cajon Canyons. The largest of the ruins is called Hovenweep Castle and contains in addition to its towers and rooms, two kivas. This culture seems to be in a transition stage as it contains both pueblo type buildings and single towers without kivas. Many of the towers are built on single large boulders and conform in shape to the contours of the boulders on which they are placed.

Just north of the southern border of Utah, but most conveniently reached from the Arizona side, is one of the most beautiful works of God, the Rainbow Bridge. This perfect arch of stone, under which the United States capitol could be placed without crowding, is noteworthy not only for its size, but for its glowing pink color and perfect proportions.

(Continued on page 511)



National Park Service

CAMP SCENE AT THE GRAN QUIVERA

This shows the Pinkleys on a tour of the Monuments under their care. Superintendent Frank Pinkley spends his time wholly on research, restoration and protection of these treasures of the past.



A GIANT DOUGLAS FIR AT THE FOOT OF MOUNT RANIER. IT IS 8 FEET IN DIAMETER AND 250 FEET HIGH—A MONARCH OF THE WOODS

How Nature Rotates Her Tree Crops

By F. SCHMOE

IT is a fact, well known to foresters, that each individual species of tree has a fairly definite old-age limit, beyond which it practically ceases to put on growth, becomes decadent, and loses its normal state of health. In this condition it is usually susceptible to disease or insect attack and is soon thrown by the wind or decays and falls of its own weight.

The various species of tree seedlings also are classed by silviculturists as tolerant or intolerant. Young trees of certain species, they will tell you, are intolerant of shade and prefer to grow in the open, while others are tolerant and able to endure the shade.

These two factors account for a very interesting natural rotation of species which goes on in every stand of mixed timber but which is particularly striking in heavy forests of the Northwest composed largely of Western hemlock and Douglas fir. This is because Western hemlock (*Tsuga heterophylla*) is a tolerant species and Douglas fir (*Pseudotsuga taxifolia*) is intolerant. Western hemlock seeds itself in the dense shade of the forest, and Douglas fir seedlings establish pure stands only in the open where there is abundant light.

In Mount Rainier National Park there is an exceptionally fine example of such a shifting of species at present in the act of taking place.

At Longmire Springs, opposite a small meadow which has resulted from the silting-in of old beaver ponds, is a dense stand of timber, at present almost entirely Western hemlock. This stand is even aged, about 100 years old. Six hundred years ago, however, the forest here was composed of a vigorous stand of Douglas fir. No doubt the slope had been swept by a forest fire back in that far off time as Douglas fir seeds itself in pure stands only following fires or clean cutting and it is not likely that logging was carried on extensively in the Puget Sound country during the thirteenth century.

It so happens that the "three score and ten" of the Douglas fir is about 650 years. Just as with the human race, many individuals of *Pseudotsuga taxifolia* do not attain their allotted time but it is even more noticeable that few individuals live much beyond it. In this particular locality almost all the trees that have reached their maximum growth and become decadent are above 600 years of age, but none have yet been found that have reached the 700 year mark. Trees of this age are usually between 5 and 8 feet in diameter at the base and are more than 250 feet high. The fertile soil, abundant rainfall, and

dense even-aged stand of this particular forest produced a splendid crop of clean boled giant trees whose heavy crowns kept the forest floor in perpetual twilight. In this dense shade no sunlight loving Douglas fir seedlings would grow. Not so with the hemlock seedlings. The tiny seeds that came winging down from the ridge above were looking for just such an environment and shortly every decaying stump and log on the moist forest floor was covered with these feathery little hemlocks.

During the present century this stand of Douglas fir has reached maturity, become decadent, and is rapidly falling out. As each old patriarch falls its place is immediately taken by the waiting hemlocks that continue to form the under-story today as they have for centuries.

At present a few old stag-headed veterans and a few storm bleached snags are all that remain of the proud forest that once covered the hillside.

Within the forest the ground is strewn with the decaying trunks of fallen giants, some up-rooted, others



STEPS IN NATURE'S CYCLE—THIS SHOWS A FEW VETERAN DOUGLAS FIRS STILL STANDING IN A STURDY STAND OF YOUNG HEMLOCK

broken from the stump at the base, all of them covered with heavy mats of small seedlings that have given rise to the present stand of young hemlock. On decaying logs and stumps more than 500 seedlings are sometimes found growing on one square foot of surface. All these dead logs and stumps are Douglas fir, above four feet in diameter. This is the authority for the statement that a few score years ago this was a pure even-aged stand of fir, the last survivors of which are rapidly falling.

The natural old-age limit of the Western hemlock at this elevation is around 400 years and the present second-growth stand is fairly even-aged at about 100 years standing. Sometime about the year 2225 this forest, unless fire or man destroys it sooner, will be decadent and falling fast. In such a state it is unlikely that many years will pass before some violent storm or epidemic of disease will sweep the hill-sides bare. Then perhaps, the Douglas fir will again "be fruitful and replenish the earth."



NEW LIFE FROM OLD—A DENSE GROWTH OF SMALL HEMLOCK SEEDLINGS FIND THEIR START ON THE TRUNK OF A FALLEN FIR

LAST CALL FOR PRIZE WINNERS!

That Photographic Contest announced in our May number closes September first. If you haven't sent in your entry either for the Curiosity Contest or the Cover Page Contest, better hurry. For full details address the Contest Editor.



"A COUPLES' PUPS"
Sterling Silvers, six months old, from the Alaska Silver Fox Farms.

Northern Fox Farms

By L. C. PRATT

IT is related on the authority of an early chronicler that shortly after the eviction from Eden, Eve complained bitterly of the inadequacy of her fig-leaf trowsers from the standpoint of both warmth and style. Whereupon, Adam, the long-suffering, is said to have seized a club and bowling over an unwary fox, presented the pelt to his delighted better half.

Whether or not this account of the first use of furs for personal adornment is authentic, certain it is that man—and of course woman—at an early stage in their existence adapted the skins of fur-bearing animals to their use. As civilizations advanced and spread into

the far corners of the earth the habitations of the wild things have become more restricted and wild life itself has been severely depleted. The demand for their skins, on the other hand, has grown enormously until faced with the ever-increasing difficulties of trapping or shooting fur-bearing animals in sufficient quantities to answer

milady's demand for fox and sable and ermine throughout the world, there has sprung up here and there an industry devoted to raising those animals most in demand.

From the standpoint of topography and climate, Alaska has been peculiarly well-situated for raising foxes. This industry is by no means new in Alaska,



United States Forest Service

The chief factor in judging a silver fox pelt is quality and the second is clearness of color. Pelts must be prime, with soft, silky, lustrous fur, and they should carry a good brush with a white tip 2 to 4 inches long. Size is the last consideration in valuing a pelt.

since it has been practiced continuously for nearly half a century. Nevertheless it is only within the last half dozen years that it has attracted any widespread interest. During these last few years the fox-raising industry has leaped forward with giant strides. The proverbial mushroom has nothing on this lusty infant. In half a decade it has grown from a few isolated, almost unknown individual operations to a tremendous industry which bids fair to soon equal the Alaskan fisheries in its return of wealth to the Territory.

This awakening interest is largely accounted for by the attractive prices offered for blue fox skins during the war-mad days of 1916-1920, when choice prime skins brought as much as \$250 each in foreign markets. Even before the great war prices had climbed slowly but steadily from an average of \$40 to \$75. The peak was reached in 1919 and 1920, when the average was about \$175. Since then it has steadily declined until now it is around \$100. Silver fox skins, of course, bring much higher prices, averaging about \$400. But the wise old heads of the game realize that present prices are not likely to hold indefinitely. At the same time it is almost a certainty that they will never reach the low levels of former days. For one thing, a market has been established. Fur has apparently made a place for itself. The demand is good and prospects are bright for the future of the industry.

The statement is often heard that when the hundreds of islands now stocked on the coast of Alaska all attain maximum fur production the market will be flooded and prices will decline to a level never before reached. These gloomy prophecies seem to lose their effect in the light of statistics showing the rapid decline in the quantity of wild fur produced. The annual production of wild fur, it is claimed, is decreasing at such

a rate that it can never be offset by fur produced under domestic or semi-domestic fur-farming operations. Fox farming in Alaska to a limited extent was probably carried on by the Russians before the American occupation, although reliable information on this point is lacking. The earliest reliable record we have of fox farming in the vicinity of Kodiak is on Long Island. This island was first taken up by Capt. F. F. Feeney in 1880, and two pair of black foxes were placed on it, the animals having been secured from Knik, Cook Inlet. A few sheep and some cattle were also introduced. A dwelling and several outbuildings were constructed and farming in the way of raising garden truck and hay was carried on. During the winter of 1881-82 the natives raided the island and killed off all the foxes, and no further attempt was made to raise foxes for some years.

Seven years later Capt. Feeney secured two pair of Kodiak black foxes with which he again stocked Long Island and in 1895 he sold the ranch, together with all stock to the Semidi Propagating Company for the sum of \$8,000.

About 1889 a whaling schooner was wrecked near Dutch Harbor. Andrew Grosvold, a member of the crew—which made its way to shore near what is now the settlement of Sandpoint—learned from the natives of their fox farming ventures. The thing appealed to him. He immediately appropriated one of the nearby islands, secured a few pair of foxes from the natives to stock

his island, and has been in the game ever since. He is now approaching 80 years of age, is hale and hearty, and personally superintends the work on his eight or ten island ranches.

Since very early days some of the Russian-Greek priests have maintained fox ranches on certain of the Aleutian islands as a sort of community property for

the Aleuts. The natives do the actual work under the supervision of the padre, and the profits go to the community.

Then there is my old friend J. D. Jefferson who hails originally from the State of Tennessee. In 1916 Mr. Jefferson, who was then about 65 years of age,



Courtesy Rosebank Fur Farms

FOXES APPRECIATE GOOD TREATMENT AND RESPOND TO KINDNESS ON THE PART OF THE KEEPER. THE PUPS ARE GENTLE THOUGH PLAYFUL AND FULL OF LIFE, AND ARE USUALLY GREAT PETS WITH THE YOUNGSTERS ON FUR FARMS.

resigned as postmaster at Valdez, which position he had held for about 15 years. He secured a small group of islands in Prince William Sound and stocked them with blue foxes. For a man at his age to launch out into a venture of this kind where he had to rely

fox raising purposes. During the exploratory period the rental for any island is \$25 a year regardless of size.

At the termination of the exploratory period a careful appraisal of the island is undertaken by the government, and the rental charges are then fixed on the basis

of the appraisal. In the appraisals only such dominant factors are considered, as the extent and character of beach line, area of suitable denning grounds, food supply, water supply and harbor facilities. The comparative value of each of these factors is determined after a careful examination by a competent and experienced officer. As



Photographs by Millar Studio, Montreal, used through the courtesy of the Biological Survey

solely on his own strength and resources, was something of a feat in itself. Jefferson put the few hundred dollars he had into this venture. He worked on his little fox ranch steadily for seven years, going into town not more than half a dozen times in all that period. His reward was the sale of the stock and improvements a short time ago for what to most of us would be quite a fortune.

At the beginning of 1923 the Forest Service reported 137 islands under permit in Alaska for fox raising with a total area of 168,533 acres. Ten other islands outside the National Forests already under lease are administered by the Biological Survey within the Aleutian Reservation. In response to the strong public demand for a law authorizing leasing of islands in the Alaskan Public Domain for fur farms, Congress on July 2 passed such a law, authorizing the Secretary of the Interior to lease for this purpose public lands in areas not over 640 acres and for periods not exceeding ten years.

The Department of Agriculture had already formulated uniform regulations for the leasing of islands under its jurisdiction, which includes all islands within the National Forests and the islands mentioned above under the jurisdiction of the Biological Survey.

These regulations provided for the leasing of suitable islands, not over 2,500 acres in area, for a maximum of 18 years. Before these regulations were adopted, some islands had been leased having an area much greater than this—in a few instances up to 10,000 or 12,000 acres. For the present, no attempt will be made to disturb the leasehold on these larger islands. Under the Department's regulations, the first three years of the lease term is designated the exploratory period, and is designed to give the operator an opportunity to establish himself and determine the suitability of the island for



TWO FINE SPECIMENS OF THE MATURE SILVER FOX

The upper insert is of the female and is an excellent type of adult vixen, of medium silver color. The lower is a male, and a fine type of the dark silver showing strong evidence of breed character, masculinity and impressiveness.

an example of how this works out, let us say that the average rating of all factors on a given island is 80%, then the rental of the island is fixed at 80% of the base rate per acre, subject to a minimum charge of \$50 per year and a maximum of \$250.

All islands are stocked with what is called the blue fox, which is merely a color phase of the arctic white fox. The animals are liberated on the island and run practically in wild state.

Food consists largely of fish which is cured by being dried, salted, or smoked. The fish diet is supplemented by cereals cooked with cracklings or fish oil. A sufficient quantity of fish is cured during the summer to last throughout the year, although a certain amount of fresh fish is obtainable at all seasons. Fish cured in brine must be thoroughly freshened before being fed. For this purpose two large tanks are used each holding a week's supply of fish. While one tank, previously freshened, is being used water is allowed to circulate through the other tank. Thus, when one is emptied the other is ready for use.

Feeding is done in small feed houses built just above high tide line. These feed houses are made of logs or lumber, are about six feet square, and have a small flume-like opening so constructed that in the trapping season the foxes can enter but not escape. This makes it possible to do selective breeding to some extent, the

operator picking out the culls and liberating the choicer animals for breeding.

Dens are usually under trees or in dry rock crevices. The blue fox is a prolific breeder—litters of 10 to 12 are not uncommon. A good average, however, is four or five. The fox is more or less monogamous, and equal numbers of both sexes are generally liberated for breeding. While the pups are small the male fox carries feed to the den and assists generally in the housekeeping, as a respectable family man should. The pups come usually in late April, but seldom appear on the beaches before late June. By the following December their skins are prime, and many operators figure on killing pups at that age. Some operators contend that the skins are better and a little larger the second year, and consequently bring a better price. Whether the extra cost of keeping them over another year is compensated by the increased returns is a question not yet entirely settled. The rapid extension of the business has created an urgent demand for breeding stock the last three years. Select stock sells at \$250 to \$350 a pair. Breeding stock of silver fox averages about \$1500 a pair for good pedigreed pups.

Strangely enough, the United States is a negligible purchaser and probably 90% of all skins produced on the fox islands are sold on the London market. There seems to be little demand for the blue fox skin in the American markets. At any rate, the price is better in London.

Naturally the government is anxious to encourage this industry in Alaska. In spite of its tremendous resources, much of the area of this great Northland has little value except for the support of wild life. The

Biological Survey is doing everything possible to build up the wild life of the Territory. In line with this policy every reasonable encouragement is extended to the fur farmer, and the rules and regulations governing fur farm operations are made as liberal and unrestrictive as they well can be. Under this policy it is only a matter of a few years when all suitable islands will be stocked with fur bearers, and in time the industry will spread to the mainland as it already has in some parts of Canada. In years gone by the life of the fox farmer was one of complete isolation. His neighbors were few and far away. Visitors to the island were confined to the occasional calls of passing fish boats, or the more infrequent visits of Forest officers. Trips to town were made a time or two a year for mail and supplies. In short, it would be difficult to imagine a more isolated existence short of being marooned on a desert island *a la* Robinson Crusoe. The rapid growth of the industry during the last five years has seen a gradual but none the less marked change in this respect. The individual farmers have organized themselves into associations for their mutual protection and improvement. In some instances mail contracts provide at least some of the islands with regular weekly or monthly mail service. Many of the more prosperous and progressive operators have substantial boats that make it possible to run into town or visit neighboring islands at frequent intervals. The radio is beginning to find favor with the fox rancher and may ultimately be the means of further diminishing his isolation. All in all, the fox rancher is happy, progressive, generally prosperous, and an all-around good citizen.

The Song of the Forester

A. H. LEWIS

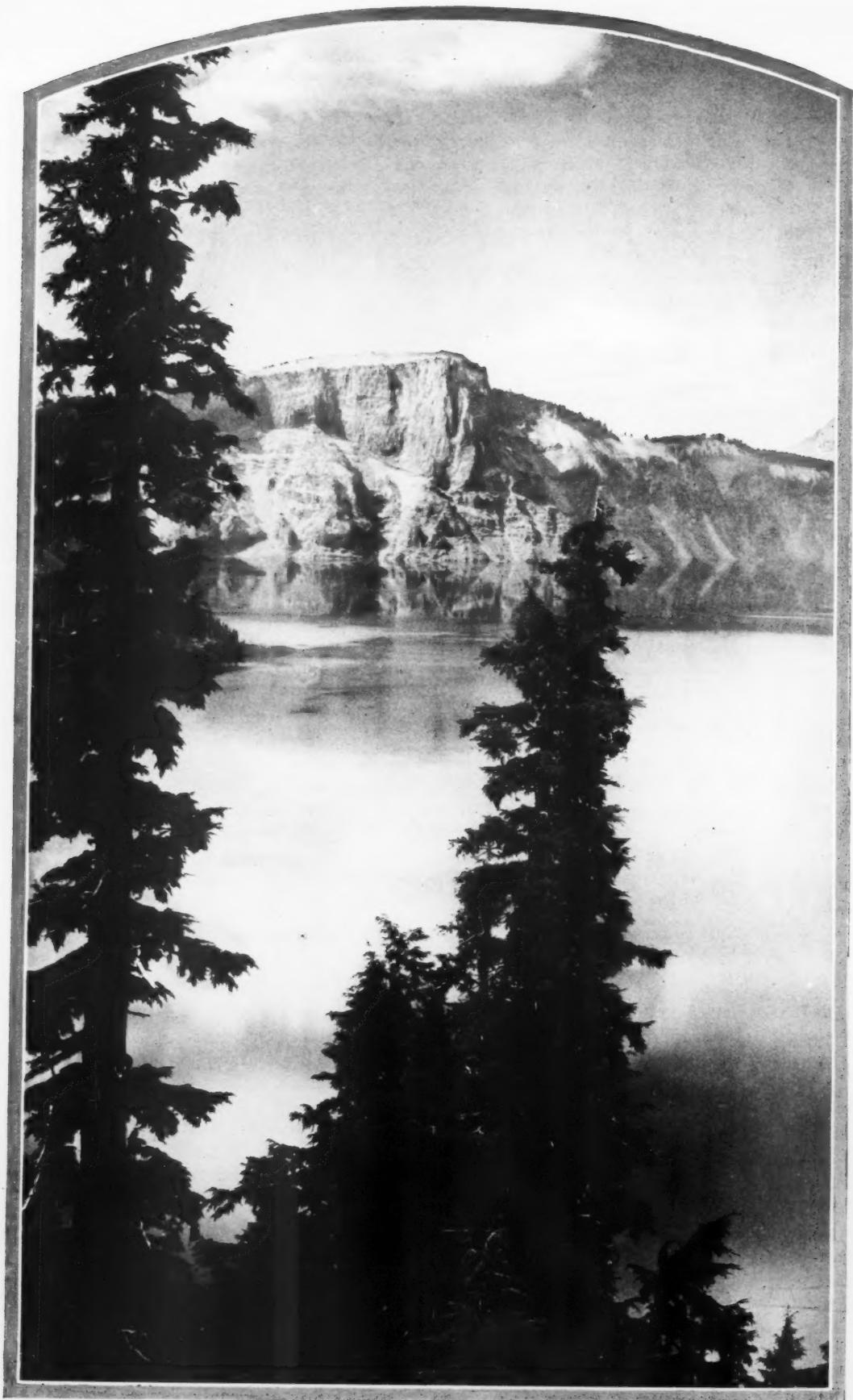
This is the song of the Forester
 As he starts in the morning grey
 With a swinging stride up the mountain-side,
 To meet the break of day.
 And he sings a song as he swings along
 Through the break of sumach red.
 "Oh, a pack on my back,
 My foot in the track,
 And a blue sky overhead."

What matter if he be a lumber-jack,
 If he be a college man;
 God gave the woods to a brotherhood,
 And not to a class or clan.
 So he sings a song as he tramps along
 With the words that his brother said—
 "Oh, a pack on my back,
 My foot in the track,
 And a blue sky overhead."



There's many a man of the city stamp,
 Who will barter honor for fame.
 There is many a liar of like desire
 Who will sell his soul for a name,
 Yet, he calls me a fool
 Of the wayward school
 When I'm off by my fancy led,
 With a pack on my back
 My foot in the track,
 And a blue sky overhead.

We are the ones who have chosen the wood
 The ones who have turned to the land.
 Men, only, may know our brotherhood,
 And our creed may understand.
 For the pack on our back is the burden of life,
 The trail is the way we tread,
 And the love of God for human kind
 The blue sky overhead.



Evening in Crater Lake National Park. This is the Famous Llao Rock

Our National Parks

By JOHN C. MERRIAM
President of the Carnegie Institution



Since I have given something more than forty years to the study of special problems such as the parks interpret, and have lived thirty of those years among the parks, I have some confidence in saying that for many purposes their purely educational value is far beyond that of any regularly established, formal educational institutions. Among the most important features are those which concern the nature of the earth—the manner of its building—the forces which have come into play—the meaning of the almost limitless history of earth-making as it is pictured before us. David said, in viewing the works of nature, "The heavens declare the glory of God, and the firmament sheweth his handiwork." This work of the Creator's hand presents itself here in such a way that all may comprehend. Here is found also much that represents the unmodified primitive life of the world, both plant and animal, remaining just as the Creator moulded it over the mountains and valleys. Nature is said to be an open book to those who really wish to read it, but there are grades and shades of meaning which may be hard to understand. There is certainly no place where the leaves are more widely spread or the print more clear than in these portions of the book.

But the parks may not be pictured solely in a setting of science as it is commonly known. In ways we can define only imperfectly they express peculiar elements of beauty and grandeur which lie beyond the realm of formally associated facts and logic. Partly does this attractiveness reside in that which stirs emotions through influence of aesthetic and artistic values, partly it is recognition of sublimity in the power and order behind nature.

I remember standing last summer facing the great mountain range at Glacier Park, thrilled with the living charm of forest and meadow and the cold brilliance of snowfield and glacier. But behind the splendor of this mantle over nature there was clear revelation of the movement of creation—shown in the body of the range which had been lifted and thrust forward many miles above the level of the plain on which I stood. This act of building was the source of glory in the mountain. The overwhelming bulk and strength of cliff, with appeal of lake and glacier, represented only residual evidences of power exerted in this great work. And the garment lost nothing of its beauty through knowing of the majesty it clothed.

While the National Parks serve in an important sense as recreation areas, their primary uses extend far into that more fundamental education which concerns real appreciation of nature. Here beauty in its truest sense receives expression and exerts its influence along with recreation and formal education. To me the parks are not merely places to rest and exercise and learn. They are regions where one looks through the veil to meet the realities of nature and of the unfathomable power behind it.

I can not say what worship really is—nor am I sure that others will do better—but often in the parks, I remember Bryant's lines, "Oh, why should we, in the world's riper years, neglect God's ancient sanctuaries, and adore only among the crowd, and under roofs that our frail hands have raised?" National Parks represent opportunities for worship in which one comes to understand more fully certain of the attributes of nature and its Creator. They are not objects to be worshipped, but they are altars over which we may worship.

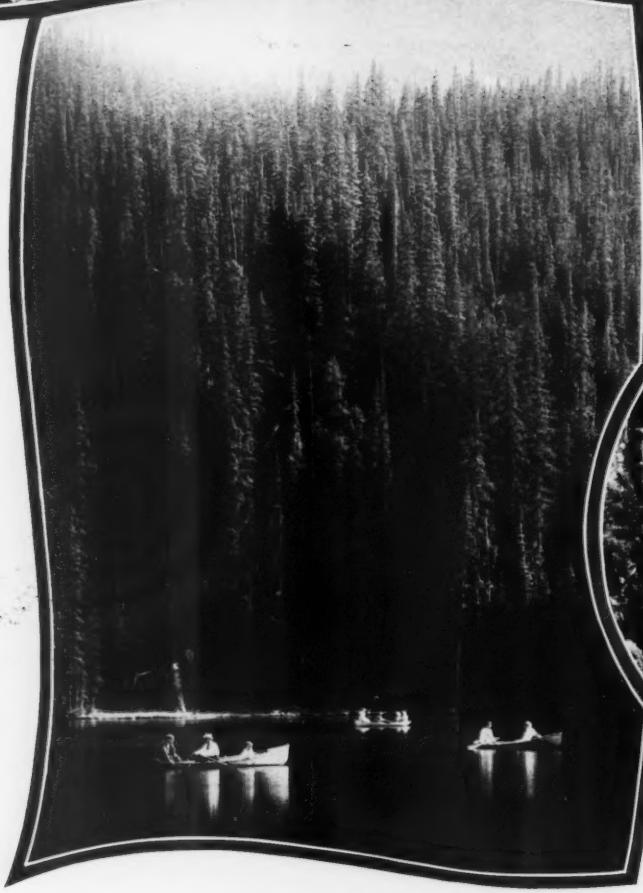


The Grand Canyon of the Colorado--That Stupendous Sculpture Carved by Nature, an Altar to Nature's God



Haynes

Jupiter Terrace in the
Yellowstone National
Park



Wiswall Bros., Denver

Boating on Fern Lake in the Rocky
Mountain National Park

Great Cliffs
Mountain Range
Enticing Trail
Brilliant Snowfield
and Glaciers—
pendous Rock Cae
ings—The Chai
of Green For
and Quiet Wa

All These Nature Offers Us
Wide Her Book of the



On the Trail—Coming Through
Grass in Glacier National Park

Great Cliffs and
Mountain Ranges...
enticing Trails...
brilliant Snowfields
and Glaciers...Stu-
pendous Rock Carv-
ings...The Charm
of Green Forests
and Quiet Waters



Offers Us When She Opens
the Book of the National Parks



Hileman
Coming Through the Bear
Glacier National Park



National Park Service

The Sheer Drop of Nevada
Falls in the Yosemite

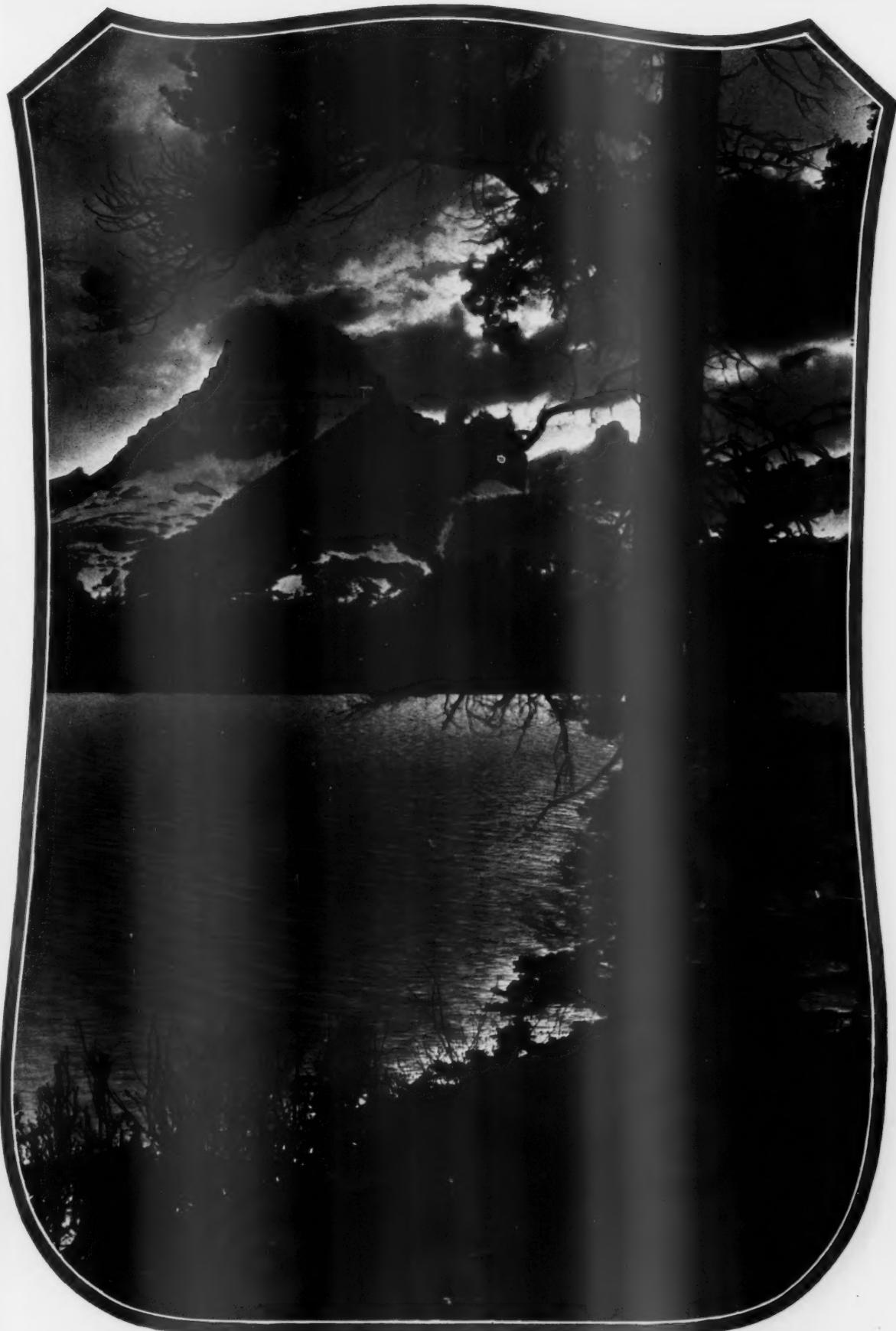
Wisewall

Yachting on Grand
Lake in the Rocky
Mountain National
Park



Photograph by Hileman

Vernal Woods and Lofty Mountains Make Beautiful
the Background of Trick Falls in Glacier Park



Photograph by Hileman

The Glory of a Sunset on Lake McDermott, in Glacier National Park



Photograph by Pillsbury, courtesy National Park Service

Sunbeams Among the Giant Redwoods in the Sequoia National Park

Politics in Our National Parks

Shall Park Standards Be Lowered To Serve Political Expediency?

By ROBERT STERLING YARD, *Executive Secretary National Parks Association*

A GRAVE situation, dangerously threatening the standards and status of the National Park system, plunging it in effect into the maelstrom of national politics, follows the enactment by Congress in May of a bill to create conditionally a Mammoth Cave National Park. The conditions are that private persons shall purchase a minimum of twenty thousand acres of underground and surface lands, including the cave, and present them to the government. Upon acceptance, the area will automatically become a National Park.

Whether or not this area possesses the sublimity of scenery and primitive quality required for admission to the National Parks System, the writer cannot say from personal knowledge, for he has not seen it.

Neither has the Secretary of the Interior, nor the Director of the National Park Service, nor any official of the permanent National Park establishment of the Government.

When the bill to create this National Park was introduced in Congress, the Public Lands Committees sent it to the Secretary of the Interior for approval. To this extent Congress conformed to invariable custom. So far, the people's safeguards were

maintained. But, upon the Secretary's refusal to express an opinion, and upon his offer to refer it to the National Park Service for investigation, the Public Lands Committees took the matter out of his hands and reported the bill favorably to Congress. Congress summarily passed it. From the Public Lands Committees' reports to the passage of the bill, four days only elapsed, a new speed record.

By this act there is created the precedent for Congress taking the park-making function out of the hands of the Interior Department and its expert bureau, and creating National Parks at will upon pressure of local communities or to serve the purpose of party politics. In the Mammoth Cave case, both these motives, but in a commanding sense politics, appear to

have been the controlling reasons.

A graver situation cannot be imagined at a time when a number of southern states are clamoring for National Parks to bring them the tourist business which the fame of the title is supposed to guarantee. It is significant that the passage of this act was followed immediately by the introduction of three new bills for National Parks in southern states, and one bill calling for a Na-



Photograph by Vance Prather

THE ROUGH STAIRWAY OF ROCK AT THE ENTRANCE
AND LEADING DOWN INTO MAMMOTH CAVE

tional Park in every state. It is clearly time for the people of the country to take National Park control into their own hands. It is necessary to stop at once the eager clutching hand of politics, and to place the system once for all under the protection of laws which shall define standards, provide protection, prescribe the processes of National Park making, and confine administration within limits which will place the system out of reach of enemies of its conservation who work slowly in the dark.

The time has surely come at last to submit this precious national institution to a competent body whose duty shall be, not to select National Parks nor "handle situations," which are Interior Department functions, but, after fundamental study of history, law, practice, fields of special usefulness and relations to other public recreational reservations, to recommend a legal establishment to conserve the system's highest uses to the nation now and in future generations.

To comprehend the emergency which demands that fundamental study and legal foundation shall be initiated at once, and that, until this is accomplished, ways must be found to hold the system safe, it will be useful to review the facts which have culminated in the fateful Mammoth Cave Act.

For many months it has been apparent to close observers of events connected with the National Park movement in the east that ideas were propagating and forces were in action which might result in grave dangers. For many months the National Parks Association has sounded constant warnings of the peril to standards in the partnership of fallacy and community self-seeking which seemed to be developing in the promotion of various National Park projects in the Southern Appalachians. It has proclaimed the rise and rapid spread of a new motive for National Park making, that of profit to local communities. The title "National Park" has finally become throughout the South no longer the name of a unique beneficent national institution, but the trade mark of a new and supposedly highly lucrative local business to be developed and conducted at the national expense.

In particular, the National Parks Association has emphasized the fatal fallacy of the theory that present standards can be maintained in western National Parks and far different standards established in eastern National Parks, without inevitable swift destruction of standards throughout the system.

From small beginnings, this partnership of fallacy and business has, within two or three years, gathered in the south the speed and sweep of many an unsound economic craze which, in past decades, has swept some section of our country, run its course and passed. During the last six months, and especially since that ever-ready opportunist, politics, joined forces with it, one could only stand powerless, and watch its course. Only now, in the reaction from its first climax of expression, has sanity and national idealism the oppor-

tunity to occupy again the field, and perhaps, if we are prompt and earnest, establish the National Parks system beyond reach of the second and possibly greater wave now gathering.

An outline of the story follows.

The origin of the movement culminating in the Mammoth Cave act unquestionably was Albert Fall's attempt, while Secretary of the Interior, to make a National Park of an area adjoining his own home ranch which would have smashed every ideal and standard of the National Parks system. To help his case, he also advocated a bill to accept for a National Park the proffered gift of a mountain top in a southern state which also fell below standard; and he informed Congress that his policy was to make National Parks of all appropriate places in the federal lands where people could enjoy outdoor life.

Both these bills met defeat from popular protest, but the seed was sown. Immediately there followed other bills to accept gift areas in the South for National Parks. The movement spread rapidly. By the following winter we heard of many similar projects in preparation.

Hoping to still the clamor for little National Parks which so many localities wanted to trade to the national government in exchange for development, upkeep and advertisement at national expense, Secretary Work appointed a committee to search the southern mountains for the best possible location for a single National Park of majesty and size. Upon this Park he hoped to concentrate the pride and desire of the South.

After months of search, his advisory committee settled upon the impressive massing of lofty mountains, still covered with primitive forest, in the Great Smoky Mountains between Tennessee and North Carolina. But at the last minute the committee changed its mind in favor of the much lesser Shenandoah location because that was near Washington. Its report to the Secretary nominating Shenandoah was by him transmitted to Congress on December 12, 1924, together with a bill for appropriations to survey the location for a National Park.

When this, the first Temple Bill, was presented to the House, the delegations from Tennessee and North Carolina at once demanded that Great Smoky should be included also, and this was done. Of its quality there was no question.

Whereupon, a demand was similarly made that Mammoth Cave should also be included, but this was at first denied; the Committee had not examined it. There was no mistaking the insistence and intention of this demand, however, and, to insure the bill's passage, Mammoth Cave was written into it as a location to be examined.

Similar demands followed from delegations of other states. The first Temple Bill, when passed, authorized the Secretary of the Interior

(1) to determine the boundaries and area of such

portion of the Blue Ridge Mountains of Virginia lying east of the South Fork of the Shenandoah River and between Front Royal on the north and Waynesboro on the south as may be recommended by him (the Secretary) to be acquired and administered as a National Park, to be known as Shenandoah National Park; and

(2) Such portion of the Great Smoky Mountains lying in Tennessee and North Carolina as may be recommended by him (the Secretary) to be acquired and administered as a National Park, to be known as the Great Smoky Mountains National Park; and

(3) In the Mammoth Cave region of Kentucky; and

(4) Also in such other lands in the Southern Appalachian

to a commission to permit its participation in appropriations) made the expected visit to Mammoth Cave, but made no report on it. Nothing further was done, either by the commission or local people, toward making Mammoth Cave a National Park, nor did it appear in any of the promotions whose progress and details were reported extensively during many months thereafter. Apparently, by common consent, it had faded from the picture.

Some months after the passage of this act, an understanding was effected between the Secretary of the Interior and the local promoters of the Shenandoah and Great Smoky areas under which, upon each group



Courtesy Louisville "Courier-Journal"

THIS IS ONE OF THE MOST STRIKING OF THE ROCK FORMATIONS WITHIN
MAMMOTH CAVE AND IS KNOWN AS THE "BRIDAL ALTAR"

Mountains as in his judgment should be acquired and administered as National Parks.

Whatever legal obligation, if any, lay in the ambiguous allusion to Mammoth Cave, it was generally understood at the time that the commission's duty would be finished when it had examined the location and reported to the Secretary. That, and the provision concerning "other Parks" had served their immediate purpose of saving the bill from opposition, and no longer were seriously considered. The bill was enacted February 21, 1925.

Soon after, the advisory committee (now changed

raising certain subscriptions for purchase, an administration bill would be introduced to make these areas National Parks. The funds were raised and, on April 14 last, the Secretary of the Interior, in fulfillment of his part of the agreement, submitted to Congress the second Temple Bill, calling for the creation of these two National Parks after certain specified areas should be purchased and presented to the government. The bill made no mention of Mammoth Cave.

But, during the spring, for several weeks preceding the Secretary's sending the Temple bill to Congress, reports had been current that the forgotten Mammoth



A VIEW FROM THE INDIAN GAP TRAIL

© Thompson, Knoxville

Beauty of National Park quality is found in this Smoky Mountain country where the area covered by the new National Park will represent Appalachian land forms and primitive forests in their highest variety and perfection.

Cave project was being revived for use in the coming Congressional campaign, and that the advisory commission was under great pressure to report it favorably to the Secretary.

Consequently, it occasioned no surprise among politicians, at least, when the commission's report of April 8, which the Secretary enclosed in his letter transmitting the Temple bill to Congress, was found to contain a recommendation of Mammoth Cave also. Commenting on the commission's advice concerning Mammoth Cave, which he had not followed, the Secretary wrote:

"It is my present judgment that no areas other than the above-described areas recommended for the Shenandoah National Park and for the Smoky Mountain National Park should be designated for a national park at this time in the southern Appalachian Mountains, and I therefore, make no recommendation for any national park or national parks in the southern Appalachian Mountains except said Shenandoah National Park and said Smoky Mountains National Park. * * * I express no opinion and make no recommendation at this time as to the desirability of the inclusion of the Mammoth Cave area within a national park."

Neither did it surprise politicians when, on the day

following the Secretary's communication to Congress, upon the introduction of the Temple bill, Senator Ernst introduced in the Senate and Representative Thatcher in the House a substitute bill identical with it except that Mammoth Cave had been written also into the text.

The Public Lands Committees duly sent this to the Secretary for a report. Returning it on May 4, he wrote: "Since the transmission of that (the commission's) report to Congress, I have not received any additional information touching the Mammoth Cave project. In the event that the Committee on Public Lands desires an additional report before acting, upon suggestion from the committee I will refer the matter to the National Park Service of this Department for further investigation, and will then make additional report to your committee when the National Park Service shall have reported to me."

In other words, the Secretary refused to report on Mammoth Cave's fitness to become a National Park until the government's own expert bureau, the National Park Service, which had never even seen it, should investigate and report to him.

That served to kill the combination bill, but not the determination of Senator Ernst and Representative

Thatcher to have Mammoth Cave made a National Park with or without the Secretary's approval. They therefore drew up a separate bill and introduced it promptly in both houses.

This second bill also was sent to the Secretary for a report, for which, however, they did not wait. The Temple bill and the Thatcher bill were heard together in the House Committee on May 8. The situation disturbed Chairman Sinnott, who asked Mr. Thatcher whether he had not better wait for the Secretary to report.

"It seems to me," Mr. Thatcher replied, "that you can take the report that he made on the other bill."

In favorably reporting this bill to Congress at the close of the hearing, the Public Lands Committee went on record for creating a National Park without examination by the National Park Service and without approval by the Secretary of the Interior.

The minutes do not show that the advisory commission, whose advice to create this National Park the Secretary had so conspicuously rejected, urged passing it over his head; but individual members of the commission urged it; and the rejected advice was made the excuse for the Public Lands Committees ignoring the Secretary's evident intent. The following excerpts are illuminating:

Major W. A. Welch, a member of the Commission, speaking "as an idealist—and I suppose I am," preferred that Kentucky should make Mammoth Cave a state park; but his idealism appeared to have acreage limits.

The Chairman: "What do you say as to the extent of that area; a sufficient extent?"

Mr. Welsh: "I would not put it under 70,000 acres under any circumstances."

Mr. Vinson, of Kentucky: "But if the 70,000 acres were procured, would that meet your views, Major?"

Mr. Welch: "I should say it ought to be that much for a National Park."

Mr. Thatcher, of Kentucky: "That is your recommendation?"

Mr. Welch: "I have told you exactly what I thought about it, and if 70,000 acres can be secured, taking in all the cave, all that beautiful region along the Green River, all the primeval forest that there is, then I am for it" (as a National Park).

Mr. Abernethy, of North Carolina: "Just let me ask you this question, Major. Suppose we find that it is necessary from a practical standpoint to take these Kentucky brothers along with us, do you not think it would be a pretty good policy just at this time?"

Mr. Welch: "I am a Kentuckian."

Later, Chairman Sinnott returned to the bill's status. "Do I understand you to say," he asked Mr. Thatcher, "that the Secretary has approved the Mammoth Cave project?"

Mr. Thatcher: "No, he has made no recommendation one way or the other."

Mr. Smith, of Idaho: "Has the park commission approved it?"

Mr. Thatcher: "Absolutely so, and the bill that I have drawn here conforms strictly to the recommendations of the National Park Commission headed by Dr. Temple."

Mr. Morrow, of New Mexico: "Does it require a report from the National Park Service upon these matters, too?"

The Chairman: "The Secretary usually reports for them."

Half an hour later, the Public Lands Committee of the House reported the bill. The next day the Public Lands Committee of the Senate reported it without discussion, and two days later Congress passed it.

To the experienced watcher of these events, it became evident months ago that all Southern National Park bills before this session were destined to passage. Politics, it was plain, controlled the situation. With the entire south afame for National Parks, and the Congressional primaries at hand, their triumphant success was seen to be inevitable. For the time, the fitness of any of the areas for admission to the system had ceased to count. Every member of the House and a third of the Senate were up for re-election.

The unanimity of Congress, and the unprecedented speed with which these bills were put through in the difficult end of a busy session, making a new record, amazed even their most optimistic supporters. The force of the rising tide amazed also those watching, with anxious eyes, the movement as a whole. With new bills crowding into Congress on the heels of this, and still others in preparation for introduction in December, what will be the situation at the session preceding the general election two years hence?

Back of this clamor for southern National Parks for community profit's sake, and this juggling of National Parks for political advantage, lie three causes common to all participants: ignorance of the nature, purpose and national destiny of the National Parks system, passion for national recreational expansion in the State field, and the fatal belief that different standards can be maintained in the same system without the destruction of all standards.

Like earlier tidal waves in our national development which were founded on ignorance and waxed great on fallacy, this tide, too, will break finally on the solid ground of national common sense. But, unlike those, it may meantime destroy a national possession of incalculable value which, from its very nature, can never be restored or replaced.

Our National Parks system, preserving inviolate for all time extraordinary examples only of the sublime beauty of this country in the primitive condition God created it, still remains unspoiled. It is our solemn duty to keep it so. It is no place for the soiling hand of politics.



EDITORIAL

The Oregon and California Land Grant

ON the tenth day following the adjournment of Congress, the President signed a bill which, in effect, commits the Government to paying taxes on some two and a half million acres of public lands, as a measure of relief to the people of eighteen counties of Oregon. The bill was passed by both the House and Senate over the adverse recommendations of the Department of the Interior and the Bureau of the Budget.

The legislation is the outgrowth of the old Oregon-California land grant. Some forty years ago the United States granted to the Oregon-California Railroad Company parcels of land in Oregon aggregating more than three million acres, much of it heavily timbered. Ten years ago Congress, finding that the railroad company had failed fully to abide by its agreement with the United States, took back 2,400,000 acres of these lands, re vesting the titles in the Federal Government. Under this Act, the United States was required to pay the railroad at the rate of \$2.50 per acre, or a total of six and a quarter million dollars, reimbursable from a fund to be created by the subsequent sale of the land and its timber.

Between 1880 and 1913 the railroad company paid taxes on these lands to the counties in which they were located. The counties assumed, with all good reason, that the lands were permanently on their tax rolls, and on the basis of future tax returns, issued bonds for road building and other public improvements. When the Government recaptured a large block of the lands, local taxes stopped, with the result that many of these counties are unable to meet the interest on their bonds and are facing bankruptcy. The bill just enacted by Congress will reimburse the counties concerned for taxes which the railroad company would have paid on the re vested lands during the years 1916 to 1926, and for all future years until the Government shall have reimbursed itself for all payments made to the railroad and the counties, by subsequent sales of the land and timber involved.

The act of 1916 revesting the lands in the United States was clearly defective in that it provided no conservation plan for the sale and cutting of timber from the sections classified as forest land. In the bill just passed, Congress had an excellent opportunity to correct that mistake, but it did not do so, apparently because local sentiment is more interested in cash relief than in conserving the forest productivity of the lands. The result it seems likely will be that some forty or fifty billion feet of the finest timber which Uncle Sam owns in the west eventually will be slashed with no regard to regulated cutting, future protection or reforestation.

Without questioning the equitable nature of the claims for relief made by the counties, the legislative method of accomplishing it, as represented by the Acts in question, may well be questioned on the grounds that they will establish the dangerous precedent of the Government paying taxes on public lands, sacrificing natural resources in order to do so, and failing to provide a constructive plan of conserving the timber productivity of public forest property.

The wiser course to follow in effecting relief for the counties entitled to it would have been to transfer to the adjacent National Forests such of the lands as are appropriately located and to provide that they be paid for at a sum equal to their sale figure as prescribed in the railroad grant. These payments, together with receipts from the sale of timber cut under the forestry regulations of the Forest Service, would create a reimbursement fund against which immediate advances for the relief of the counties could be charged. Regulations for the sale and cutting of timber on lands not susceptible to inclusion in National Forests could be provided for in the same bill. This procedure would give immediate relief to the counties and assure the cutting and subsequent protection of the Government's timber under methods that would preserve the productivity of these valuable forest lands.

The Forest Tax Law for Oregon

THE Reforestation Commission, created by the 1925 session of the Oregon legislature to study the question of reforestation and to recommend legislation to the 1927 session of the Assembly, submitted its report last month. The report deals almost wholly with the need for reform in forest taxation and submits a recommended law for the consideration of the people of the state. In broaching the subject the Commission points out that the present situation, insofar as cut-over lands affect the tax revenue of the state, is not desperate, but that it is becoming more serious every year. The present area of forest land in Oregon which is not now valued or assessed for its timber approximates 2,625,000 acres, and this area is increasing at the rate of about 130,000 acres a year. These lands are returning to the state an average tax of only ten cents an acre a year.

In pointing to the danger ahead in the form of reduced tax income to the state, the Commission cites the plight of Michigan where forest exploitation without reforestation has left a third of the state verging upon insolvency, with millions of acres tax delinquent and thrown back upon the state. In formulating a proposed forest taxation law, the Commission has also turned to Michigan and other states which have shown a progressive attitude towards this question. That the present situation in Oregon is adverse to the future interests of the whole state is shown by the analysis of the Commission which declares that the present owner of forest land will, as a rule, lose less by giving his land to the state now after it has been cut over than he will if he finances the growing of a new crop under the present general property tax system. If this is correct, it must be obvious that private owners will not

embrace reforestation under present conditions with any degree of enthusiasm.

In drawing reform legislation the Commission took the position that the state must show the private owner a business proposition which gives fair promise of warranting the necessary investment in land, growing costs and taxes. The law which it recommends applies only to cut-over land or forest land which does not contain a merchantable stand of timber. The essential features of it are a classification by the State Board of Forestry of the merchantable or non-merchantable character of all forest lands in the state; removal of reforestation lands from the general property tax list making them subject to a special annual tax of five cents an acre; a yield tax of twelve and a half per cent of the value of the forest products grown on the lands and payable when the trees are cut; a contract between the state and the owner which protects the latter against legislative changes and increases in taxes during the period required to grow his new forest.

This law is not materially different from yield tax laws which have been passed by several other states. It does appear to go further in its attempt to protect the owner against having his forest business disrupted by succeeding legislatures, a guarantee that is most important if private forestry is to be developed on a state-wide scale. Neither study nor experience of forest taxation in this country are sufficient to say that the Oregon law will accomplish all that it seeks, but certainly its passage by the legislature will mark a forward and timely step toward reforestation in a state where lumbering is at its crest and cut-over lands are accumulating rapidly.

More Wood or All Metal

A RECENT issue of a widely read periodical contained two full page advertisements of makers of well-known automobiles which must have left the reader in a state of great quandary. One of the advertisements featured the fact that the car advertised contained no wood; the other automobile advertiser boasted that his car contained more wood in its construction than any other automobile made. All of which leaves it up to the poor unscientific buyer to make his decision on the basis of hearsay evidence and strong selling talk.

For a number of years the relative merits of certain metal and wooden parts of automobiles have been hotly debated. There undoubtedly has been a trend in many cars to more metal, but experience appears slowly to be winning back for wood its proper place as the material which gives the best all-around service in many parts of the automobile. For our own part,

we incline toward the car which boasts of "more wood" rather than "all metal."

We are reminded of a conversation recently heard in the street wherein one of those cocksure individuals who know everything pointed to the all metal body of a late model car and asserted that wood is unnecessary in the manufacture of automobiles. His companion promptly took exception and pointed out the numerous parts of the car in which the products of the forest play essential parts, from the steering wheel to the balloon tires.

In any event, the automobile industry cannot get along without wood. It is estimated that over one billion feet of wood now go into the manufacture of the more than three and a half million trucks and passenger cars manufactured in this country every year. As with railroads, it is a case of "wood and transportation go hand in hand."

"Who's Who" Among Our Officers

A NUMBER of years ago, before timberland owners and manufacturers depending upon the forests were thinking at all of forestry, George Wing Sisson, Jr., became thoroughly interested in forest perpetuation. Today he is a proven leader in the development of forestry for the paper industry. His family has been identified with timberland ownership and the manufacture of forest products in the Adirondacks for nearly sixty years so that from boyhood Mr. Sisson has been in contact with forest operations and has seen the devastating effects of the old methods.

He became convinced at an early age that the perpetuity of these industries rested on more intelligent and careful protection and treatment of our forest lands.

It was while Mr. Sisson was president of the American Paper and Pulp Association that this association appointed a forestry committee in 1919 and outlined a forest policy which would be practical in handling timberlands for the production of pulpwood.

His deep interest in the subject of forestry is also attested by the fact that he sent his son through

forest schools in preparation for handling timberland owned by Mr. Sisson's company. As president of the Empire State Forest Products Association he has led the campaign of that association for more thorough and practical utilization of timber in New York State. He has been ready always to give of his time and means in furtherance of forestry legislation, both in New York and in the national capital. Mr. Sisson is the President of the Racquet River Paper Company and it is generally said in the paper industry that he is in fact the father of forestry in that field.

Mr. Sisson lives on a 600-acre farm estate on the northern slope of the Adirondack foothills where for nearly forty years he has carried on successfully the breeding and development of Jersey cattle, Belgian draft horses and sheep. For his work with Jersey cattle he is known internationally and has served as judge at many national and international shows. His wide and constant interest in agriculture, forestry and industrial affairs makes him a citizen of great usefulness, not only

in his own home state but throughout the nation. His wide interest in public affairs is evidenced by his aggressive contact with the National Industrial Conference Board and his service as a member of the executive committee of that board. There are in fact few helpful public activities in New York State, whether agricultural, industrial or social, in which he has not been an untiring worker.

Mr. Sisson has held many offices, among which are president of the New York State Breeders' Association; president of the New York State Agricultural Society, and president of the Empire State Forest Products Association. Since 1924 he has been a member of the Northeastern Forest Research Council and since 1922 a director of the American Forestry Association.

With the Ranger Naturalists

(Continued from page 454)

Yellowstone Park, lies less than one-half hour's drive from the northern boundary. Since this was my first visit, I was fortunate indeed that circumstances had arranged my entrance at this point. Here, with the help of the educational officers of the Park Service one may best gain a general understanding of all the various natural features of the Park, so that during the ensuing days these marvelous phenomena can be understood as parts of Nature's big and logical story rather than as individual and spectacular "freaks." The government has taken the initiative in carrying this big message of the Yellowstone to all visitors.

The very night we arrived, we visited Mammoth Automobile Camp to become acquainted with some of the people who visit Yellowstone. As we sat around the huge campfire provided here each evening by the park rangers, our attention was called by a man in uniform who announced himself as a Ranger Naturalist whose pleasure it was to welcome us and tell us something of the Yellowstone. His half-hour's talk seemed more like a personal chat than a lecture, but nevertheless, when he had finished, we knew the fundamentals of Yellowstone geology, starting with the volcanic activities that built up its mountains and plateau and preserved the fossil forest. We were told how the water from Lake Yellowstone originally flowed southward and eastward to the Atlantic, but finally broke through a barrier to the north and then turning westward made its way to the Pacific, carving the deep canyon of the Yellowstone, which was subsequently beautifully tinted by the action of the vapors from hot springs. We learned of the glacial invasion, of Obsidian Cliff and of many other interesting features. Hot springs and geyser action were explained and then we were told very briefly of the birds, mammals, trees, flowers and insects to be found along the trailsides.

All this was merely an introduction that was cer-

(Continued on page 510)



GEORGE WING SISSON, JR.

The *PLUS* in Lumber



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the Industrial Lumber
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MANY purchasing agents for industrial concerns will remember when the Group Selling Plan of the Weyerhaeuser mills first placed at their disposal the combined output of 17 complete manufacturing units through one direct, personal representative.

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As this industrial service has developed here are the PLUS factors delivered today by the 86 Weyerhaeuser Representatives:

- 1 *Dependable Source of Lumber Supply*—including 12 species. Among them are Douglas Fir, Pacific Coast Hemlock, Western Red Cedar, Ponderosa Pine, Western Larch—and the finest of Genuine White Pine.
- 2 *The right wood for each purpose.* You might talk your problems over with the Weyerhaeuser Representative. Get his recommendations. What Weyerhaeuser has contributed to crate users, for instance, is industrial history.
- 3 *The species and grade you order*—not some kind of lumber that somebody else thinks is good enough for you so long as you don't know the difference.
- 4 *And at the right price.* About this price matter a good deal of confusion still exists in the minds of many buyers as to just what the proper species and grade designation really is for the lumber they are using. If it's actually No. 3 White Fir the buyer naturally penalizes himself when he calls for prices on No. 2 Spruce. The safe thing for him to do is to let the Weyerhaeuser man specify it for him in the recognized Association standard terms of the lumber manufacturer. Then all of his bidders will be bidding on the same basis.
- 5 *Lumber of standard grades and uniform in grade* time after time. The specification of lumber by obsolete, local or special grade names may get you a cheap price but not the same lumber.
- 6 *Full tally, species, grade and quantity.* About this matter of tally, you can buy lumber today on different units of measurements: board feet, surface feet and lineal feet. Therefore, it is well to specify the unit of measurement you are buying—and then to know that it is actually delivered.
- 7 *Lumber scientifically logged, manufactured, processed and seasoned.*
- 8 *Resources of 17 saw mill plants, served by modern logging camps in as fine stands of timber as grow anywhere.*
- 9 *Shipment within 24 hours*, if necessary, from three fully equipped Distributing Plants at Baltimore, Portsmouth and Minnesota Transfer.
- 10 *The personal interest* of Weyerhaeuser Men in each of the customers they serve—an asset that the man who forever shops around for a "cheaper price" never dreams of.

Why not let the Weyerhaeuser man tell you personally what he can do for you?

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Weyerhaeuser Forest Products are distributed through the established trade channels by the Weyerhaeuser Sales Company, Spokane, Washington, with branch offices at 208 So. La Salle St., Chicago; 285 Madison Ave., New York; Lexington Bldg., Baltimore; and 806 Plymouth Bldg., Minneapolis; and with representatives throughout the country.



SAPLING SAM'S SCRAP BOOK

What's in a Name?

THE SASSAFRAS MOUND LIBERTY BELL BIRD AND BEAST CLUB. This charming name comes from the state of Illinois. As almost anyone can readily see, it indicates that the members live on a high place wooded with sassafras trees. The members are patriotic, they love birds and they promote kindness to dumb animals. At their annual anniversary day meetings they serve sassafras tea, use liberty bell place cards, name a bird in response to roll call, and for the program each member reads a paper on why we should all be kind to some dumb animal such as the horse, the cow, the cat, the dog, or the husband. This sort of name is especially suited to rural communities where the elemental virtues are rampant and golf and auction bridge are impossible.—*Kansas Industrialist*.

Concerning the Goat

"A goat is about as big as a sheep if the sheep is big enough. A female goat is called a buttress, a little goat is called a goatee. Goats are very useful for eating up things. A goat will eat up more things than any animal that ain't a goat. My father got a goat once. My father is an awful good man. Everything he says is so, even if it ain't so. This is all I know about goats."

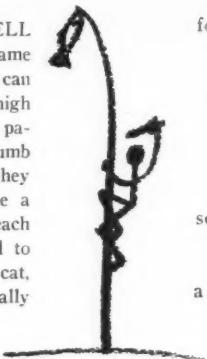
Consolation

On the night of May 11th Ranger Guthrie was eating supper in a Deer River (Minnesota) restaurant after a session of fire fighting around Cottonwood Lake. Mike was pretty tired and was busy eating, when one of his friends asked him how the fire was up at Cottonwood Lake. "Well," said the Ranger, "we sure had a hard fight and we lost the cottonwood, but we saved the lake." —*The Smoke Screen*.

Where is Here?

A crew of French-Canadians were rafting logs on Lake Champlain. Darkness overtook them and they had to tie the raft up for the night. While they were asleep a big wind came up. The raft broke loose and was drifting, when Pete, one of the crew, awoke and saw what had happened.

"Hey, Joe! Joe Lego!" he called to the boss.



Fishin' Taught Here

The novice at trout-fishing had hooked a very small trout and had wound it in till it was rammed against the end of the rod.

Pupil—"What do I do now?"

Instructor—"Climb the rod and stab it."—*The Lumber Cooperator*.

Joe rolled over and grumbled, "What you wake me for?"

"We are not here, no more, Joe."

"Where are we?"

"Ten mile below."

"Then tie 'er up."—*Everybody's Magazine*.

Sudden Timber

Sweet Young Thing: "Are you quite sure these seeds will grow into big strong trees?"

Shopkeeper: "Madam, I will guarantee them."

Sweet Young Thing: "Well, in that case I'll take a hammock as well."—*Service*.

Wild Animals I Have Known

The *Pacific Sportsman* calls attention to this remarkable natural history note from summer resort folder: "grumbling gray tree squirrels come down upon the moss-grown fence and growl their disapproval, while brown crickets, hiding under a rock, defiantly tell you to cheer up."

Now You Tell One

A mule and a Ford are said to have met on the highway.

"And what might you be?" asked the mule.

"An automobile," answered the Ford, "and you?"

"I'm a horse," replied the mule.

And they both laughed.—*Christian Evangelist*.

Our Mistake

Now tell me, Mister Editor,

And tell me cusséd true,
Just what the hallylooyer
I have ever did to you.
You said you had enclosed to me
A merry twenty-fiver;
But though I've looked, and
looked again,
I ain't found ary stiver.

Your envelope is blank and bare
As Mother Hubbard's closet;
There ain't no sorta paper there
That banks take in deposit.
Why do you thus raise to my lips
A stein with naught inside it?
That sorta brew may do for you;
Myself—I can't abide it.
Your conduck, I am bound to say,
Doth cause me consternation;
O gawd—sez I unto myself—
Can this be conservation?

—Q. C.

(In a letter to the Editor)



How the Fire Started

Forest Fire Warden A. B. Brant, of Berlin, Somerset County, in reporting the cause of a fire states "H. P. Hay and Sherman Berkley were leading a yearling heifer along a road. The creature either got tired or stubborn and refused to go any farther. They coaxed and used every means of persuasion to get her to move, but without avail. They concluded to build a fire near her and compel her to move. The fire not only moved the heifer but spread to adjoining forest land. Hay and Berkley will pay the bill for cost of extinction."—*Pennsylvania Forest News Letter*.

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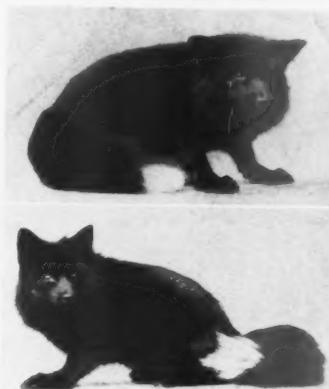
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Fox Farming

is fun and may be the most profitable end of a self-sustaining estate, or as a part of your farm enterprise. Wooded acres near the large cities are frequently ideal spots for the business—the ranch itself occupies little space. Let us suggest plans for your profit. Write to the

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BOONVILLE, NEW YORK



Courtesy, Tarnedge Foxes

A group of the oldest, highly respected Breeders have created standards of fair dealing for this Bureau.

A Semicentennial

THE Fox Breeding Industry began its hardy fifty years ago—it will have its Semicentennial in a year or two.

The first domesticated Silver Foxes were said to be the litter raised by Benjamin Hayward, of Prince Edward Island, in 1879. Hayward had acquired a male pup from an Indian trapper. He was the first man known to set out deliberately to capture Silver Foxes for breeding purposes, and he soon was in possession of a female companion for his male pup.

Hayward sold hides from the progeny of his first breeders at \$100 each before he discovered the same hides were resold at about \$1,000 each in the regular markets.

The income for Fox Breeding still marks the industry as one of the most profitable branches of farming, according to the U. S. Department of Agriculture. Furs, generally, have been demanding higher and higher prices in years past.

Let us send you the story of the industry as written by the U. S. Department of Agriculture!

Under the heading "Income" you will find in the Farmer's Bulletin 795, U. S. Department of Agriculture, the following:

"The profits from Silver Fox farming have generally been large. . . . Following the decline of the speculative phase of the fox industry, ranch-raised silver fox pelts reappeared at fair sales, and brought encouraging prices, a few going as high as \$1,000 each.

"Many wild skins are necessarily imperfect, being unpruned, worn, or not well colored, but those from selected domestic animals—when their fur is at its best—may be confidently expected to rank as first-class goods."

"The silvers are of superior beauty and many years must pass before they can become common."

You can sell all of the Silver Foxes you can raise on your place. The ranch takes up comparatively little space like your kennels or the chicken runs. Read our suggestions.

It costs nothing to consult with us about it. Address any member of the Bureau or write to the Silver Fox Breeders' Bureau, Box 426, Pleasantville, New York.

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AROUND THE STATES



Pennsylvania Road Map Shows Forest Camps

As one means of acquainting the people of Pennsylvania as well as tourists from other states with the opportunities for recreation in the Pennsylvania State Forests, a new road map recently issued by the State Highway Commission contains a complete list of all public camp grounds in the State Forests. Thirty-three public camps have been developed for the convenience of automobile tourists, picnickers and other campers. They are equipped with tables, benches, fire-places and a supply of clear water and space for tents. Owing to the growing demand for camping space it has been necessary to restrict occupancy to two consecutive days. Those desiring to remain longer must secure a permit for camping from the local forest office.

Copies of the map which show all Pennsylvania State highways may be obtained by writing the Pennsylvania Department of Highways, Harrisburg.

Airplane Forest Patrol Starts in California

Airplane patrol of the forested regions of California has started. Planes will operate out of Mather Field, Sacramento, and Griffith Park, Glendale. On June 16, forest airplane patrol began in the Pacific Northwest States of Oregon, Washington, western Montana and northern Idaho.

Airplane forest patrol was again made possible this year by a special appropriation of \$50,000 by Congress. Pilots and mechanics have been selected from spe-

cially qualified officers and enlisted men of the Air Service reserve corps.

This year planes will be used primarily for the reconnaissance of burning fires, for patrol duty following lightning storms, and for the transportation of emergency equipment to the fire line. Patrol service will be rendered, on request, to state officials and other agencies cooperating in fire prevention in the Pacific Coast forest regions.

"Show Window" Forests for New York State

A conference of foresters, sportsmen and naturalists meeting in Norwich recently discussed plans for the establishment of the first of a series of demonstration forests in New York State.

Provisions have been made by the Legislature for the purchase of demonstration forests and game covers by using money out of the revenues received from the new and broader hunting license, just increased to include hunting, trapping and fishing. While the purpose of these forests primarily is to increase the game supply, they will also show how forestry may be carried on in a practical way and at the same time promote wild life.

The Littlest Bear and His Brother Are Offered a Home

A summer camp bringing joyous days and sturdy out-door health to 400 poor children is looking for a pair of bear cubs or some other small animals for the youngsters' zoo. Remember what fun it was to play "zoo" in the backyard? Here's a chance to bring some pure delight to the

whole backyard gang. Correspond with the Fish and Game Department, Montpelier, Vermont.

Sixth National Conference on State Parks

A program of constructive discussion and a number of strenuous excursions marked the Sixth National Conference on State Parks at Hot Springs, Arkansas, June 14-17.

Power development in its relation to state parks occupied much of the time on the first day. Tom Wallace, Chief of the Editorial Staff of the *Louisville Times*, who has worked unceasingly for the preservation of the scenic features of Cumberland Falls, championed the viewpoint of the park-lover. O. C. Merrill, of the Federal Power Commission, pointed out that the source of much of the present day leisure, was the labor-saving due to the development of hydro-electric power. He emphasized the necessity of carefully weighing the power and scenic needs in cases of possible conflict. Hon. John Barton Payne, Chairman of the Conference, recounted incidents during his administration as Secretary of the Interior which called for vigorous defense of public interest against pressure for the development of power within the National Parks.

H. C. Couch, of the Arkansas Light and Power Company, said he believed that the conflict between the two uses could often be reconciled and cited the recreational use of the shores of Lake Catherine—a reservoir developed by his

company on the Ouachita River near Hot Springs.

About thirty of the delegates visited Petit Jean State Park near Morrillton, Arkansas on June 15, as guests of the Hot Springs and Morrillton Chambers of Commerce. This Park takes in much of the beautiful country about Petit Jean Mountain and contains some unexplored Indian caves.

Speakers on the third day of the meeting included D. E. Colp, of San Antonio, Chairman of the Texas State Park Commission; Harris A. Reynolds, of the Massachusetts Forestry Association, and S. Herbert Hare, of the American Society of Landscape Architects. Mr. Reynolds urged the discontinuance of independent scenic advertising of State Parks and declared that the success of a state park depended in the long run on the "self-advertising" qualities of the area. Mr. Hare discussed the necessity of landscape design in natural parks when they were to be adjusted to the uses of man.

Resolutions were adopted by the conference favoring the establishment of nature museums in state parks for educational purposes; favoring the planting of road-side trees and urging state park enabling legislation in all the states.

Officers for the next year are Hon. John Barton Payne, Chairman; Stephen T. Mather, Vice Chairman, and Miss Beatrice Ward, Secretary-Treasurer.

A company of delegates spent the seventeenth visiting the proposed Ouachita National Park as guests of the Mena Chamber of Commerce. Shirley W. Allen, Forester of the American Forestry Association represented the Association at the Conference.

The next Conference will be held in May, 1927, at Bear Mountain, in Palisades Interstate Park.

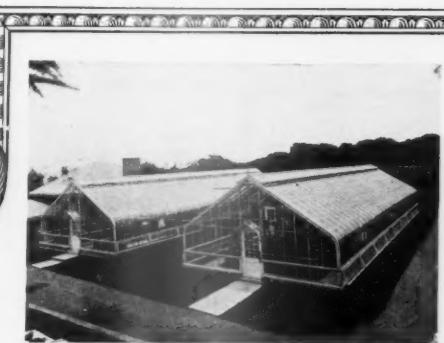
Who Owns the Kaibab Deer Herd?

The Federal Court sitting at Los Angeles recently denied application of the Forest Service for a temporary injunction against the State of Arizona to prevent interference in handling the deer herd on the Kaibab National Forest.

The application, it is understood, was based on affidavits stating facts concerning overgrazing of the Kaibab area by the deer and setting forth necessity of freedom in managing the herd on the part of the Forest Service, and the action arose out of the desire of the Service to secure proper authority for the reduction of the herd by the most humane means, because its rapid increase in numbers was leading to great suffering among the animals, and practical starvation.

The question of ownership of the herd was not decided by the Court. Meanwhile, the herd continues to increase to a point

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where starvation seems imminent and destruction of the range inevitable.

The contention of the State of Arizona is that it has title to all wild life in the State, whether on Government lands or upon Government game preserves or within the boundaries of the National Forests. The Forest Service maintains among other things that the act of Congress establishing the Grand Canyon Game Preserve expressly granted the Secretary of Agriculture full authority to "regulate the hunting, trapping, killing or capturing of game animals upon the lands of the United States within the limits of such game preserve."

An agreement was made in 1924 between the State Game Warden and the Forest Service that the Kaibab Forest would be thrown open to all hunters either local or of other States upon payment of a fee to the Government. Under the agreement the hunters were to be allowed to kill three head of deer each, with or without horns, and to pay the Government \$5 a head for each deer killed, of which sum \$1.25 was to go to the State, the balance being used by the Government for expenses in handling the hunting. Hunting was to be allowed in the Forest during the 60 days' period starting October 1, and ending November 30, 1925.

Governor Hunt, however, finally interfered in the case and directed the State Game Warden to allow hunting only under the Arizona State law, which is during the month of October, each hunter to kill only one deer with horns; non-resident hunters to pay the usual non-resident hunting fee of \$20, while resident hunters were to pay the regular State hunting license fee, \$1.25.

The Federal petition states that there are 722,464 acres in the Grand Canyon National Game Preserve, and that due to the increasing size of the herd of deer, between 40,000 and 50,000 head, the Forest is in danger of being destroyed because of lack of feed for the herd which causes the animals to feed on the young trees and the low hanging boughs in the Forest, so that at present reforestation has practically ceased.

States May Acquire Public Lands for Recreational Use

Under an act passed by the Congress just adjourned, States may now acquire by exchange areas of public lands chiefly valuable for recreational purposes, provided the public lands selected are not desired for federal administration. The Act authorizes the Secretary of the Interior to withhold from all forms of appropriation unreserved non-mineral public lands which he classifies as chiefly valuable for recreational purposes. Having thus classified the areas the Secretary is further authorized to exchange them with the State for state-owned land upon the basis of equal quantity or value. Titles to Government lands

transferred to the state shall contain a reservation to the United States of all mineral deposits in the land conveyed, and of the right to mine them under regulations established by the Secretary. In the event the lands selected by any state are not used by the state for park or recreational purposes, or that the rights or any part of them are being devoted to other use the Secretary may revert title back to the United States.

A further provision of the Act gives the Secretary discretion in holding public lands classified as chiefly valuable for recreation subject to purchase by the state or county in which the lands are situated, or by a nearby municipality in the same state. The prices are to be fixed by the Secretary, and the sale is to be subject to the same reservation of minerals and reversion of title should the lands not be put to recreation use by the State, county or municipality. In the event the latter do not desire to exchange or purchase public lands for recreational use, the Act provides that the Secretary may lease them for periods of twenty years with privilege of renewal for a like period at reasonable annual rentals.

The effect of this Act will undoubtedly be a large number of selections by western states of public land areas chiefly valuable for recreation and for development as a part of the park systems of the states. In anticipation of this legislation the President has already withdrawn by official proclamation some fifty areas in the West which appear to be primarily valuable for recreation, and which may best be used and developed for this purpose by the states rather than the Federal Government. It is understood that it will be the policy of the Department of the Interior to examine and classify areas contemplated by the Act only upon specific requests from the state or county in which lands are located.

Optimistic Future Predicted for New England

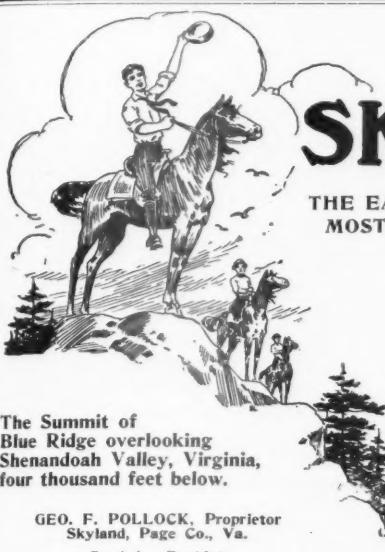
Col. W. B. Greeley, Chief Forester of the United States, at the recent annual meeting of the Vermont Forestry Association stressed the importance of forestry to New England in encouraging terms.

Col. Greeley stated that "The greatest period of all in forestry history in New England is still to come. She can be just as strong socially and economically as she has been in the past. Forestry can restore the economic strength of New England by the use of the millions of acres of idle and waste land.

"The present policy of the national government is to seek through cooperation to encourage the outward spread of forestry. We must get local agencies to work and in this way farm and industrial forestry can be as firmly established as it is in Europe. We should

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SKYLAND, VIRGINIA

On May 25th to 28th, 1925, the National Conference on State Parks was held at Skyland with 200 delegates from all over the United States present, besides many scientists, educators and conservationists. Among the distinguished visitors were Secretary of Interior Dr. Hubert Work, Hon. John Barton Payne, Mr. Stephen M. Mather, Governor E. Lee Trinkle, of Virginia, and many others.

Secretary Work's Southern Appalachian National Park Committee, consisting of Representative Henry Wilson Temple, Pennsylvania, Chairman; William C. Gregg, New Jersey; Harlan P. Kelsey, Massachusetts; Colonel Glenda S. Smith, U. S. Geological Survey, Washington, D. C.; and Major William A. Welsh, General Manager, Palisades Interstate Park, New York; made Skyland their headquarters while inspecting the region during the Summer and Fall of 1924.

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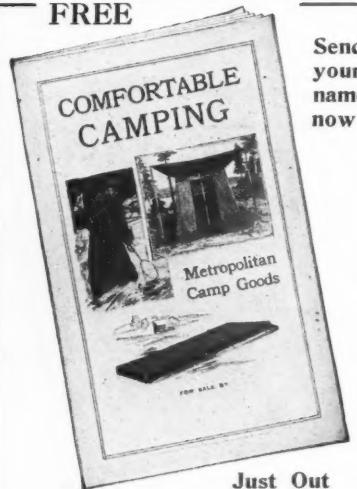


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not look for too much from the central government, the effort should be localized. The need is for Vermont to go ahead on a forestry program of her own with reference to her particular needs."

Col. Greeley touched on the importance of conserving the natural resources of the country by the preservation of the forests; expressed his hearty favor of town and municipal forests and emphasized the economic importance of State-owned forest tracts. He stressed the necessity of education in the matter of forestry problems and urged a more general knowledge of fire fighting and the need of incorporating instruction in forestry in the public schools.

The members of the Association were urged to put their efforts into the establishment of State Forests and Col. Greeley gave figures referring to the National Forests to show that such an investment can be made to yield large dividends.

Land Owners Learn Forestry

Because of the importance of wood in the Finnish economic system, the Government is taking steps to educate the small farmer and land owner in forestry. Instruction is being given in the woods in principles of cutting and thinning, sowing and planting. Competition in certain tasks in forestry have been arranged for covering periods of one, five and ten years. A committee judges results at the beginning and end of the period, and prizes are to be awarded.

Forest products in Finland form the most important group of exports and were valued at about \$75,000,000 last year.

A complete report on Finland's activities together with a discussion of the forest problem of Finland has been published by the Department of Commerce as Trade Information Bulletin No. 408. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for ten cents.

State Spring Planting Records

In New York State approximately twenty million trees were planted this spring—more than double the number planted in the spring of last year. Fall will probably increase the number to twenty-three million. It is planned to quadruple the trees raised in the nurseries by 1927 over the output of 1925.

Pennsylvania will further increase the output in the Middle Atlantic states. Present plans provide for doubling tree production in Pennsylvania by 1928. Other sections of the country are planting more trees than ever before. Forest-tree growing has been stimulated by the passage of the Clarke-McNary law which will be the means of assisting 25 states in reforestation work. An allotment of \$2,000 in February annually to each state through

the provisions of this law will provide means for carrying forward the establishment of nurseries in many states until the states themselves are supplied with adequate funds.

The plains and prairie states including North Dakota, South Dakota, Iowa, Nebraska, Kansas and Oklahoma, have exceeded other sections in reforesting idle land, having done 54 per cent of all planting. The Lake States rank next with 14 per cent; the Middle Atlantic section stands third with 8.8 per cent and the Rocky Mountain States with 7.8 per cent fourth.

The farmers are far ahead of other timberland owners in the number of acres planted having supplied 75 per cent of all the artificially planted forests while the large timberland operators and wood using industries have reforested only 1.4 per cent. It is to be expected that farmers would do more planting—they are the largest class of idle land owners as well as timber owners, but compared with the acreage owned by lumbermen, the percentage of reforestation work done by farmers is greatly in their favor. It is apparent that owners of farm land are beginning to consider the growing of trees from the crop viewpoint—they have the idea of crop production when planting trees as they do when planting grain and other farm staples.

Delaware Plans Forestry Law

The Delaware State Conservation Commission is making a careful survey of forestry conditions in order to submit a report to the next Legislature which may be used as a basis for a State Forestry law. This survey is being made in pursuance of a legislative resolution.

Wisconsin Pulp Manufacturers Recommend State Forestry Program

D. C. Everest, acting in his capacity as chairman of a committee representing the pulp and paper industry of Wisconsin, has presented to the Interim Committee on Administration and Taxation, of the Wisconsin legislature a very constructive forestry program for that State. Mr. Everest's committee was created on April 15 at a meeting of the Wisconsin Pulp and Paper Manufacturers. Other members of the committee are C. R. Cecil, Cornell Wood Products Company, F. E. Sensenbrenner, Kimberly-Clark Company, Guy Waldo, Flambeau Paper Company, and W. R. Wheaton, Pulpwood Company of Appleton.

The committee's recommendations deal constructively with forest fire prevention, forest taxation, reforestation and forest recreation. It is pointed out that Wisconsin has no adequate system of protecting her forests from fire and recommends that immediate appropriations be made by the State to carry out the recommendation of the State Conservation

Commission. It recommends an appropriation for fire protection of three cents an acre a year.

Recognizing the responsibility of the land owners as well as the public, the committee further recommends assessments of one cent an acre a year on all privately owned forest lands, conditional on advisory representation of the land owners in the expenditure of the funds.

In discussing forest taxation the committee points out the effect of present methods of taxing forest lands in hastening the cutting of present forested areas and discouraging owners in holding their cut over lands for reforestation. It endorsed the forest yield tax for cut-over lands and recommended uniform assessments on uncut land. It also recommended greater activity on the part of the State in reforesting State lands and in aiding private reforestation by distribution of planting material at cost. A further recommendation is for an advisory conservation council to aid in educational work.

Alabama Will Have New State Nursery

Through the gift of a public spirited Alabama citizen it has been possible for the Forestry Commission to purchase a 40-acre tract in Sumter county which will be developed as a State nursery. Pines will comprise the principal planting stock to be grown and it is expected that the Commission will have a considerable number of trees available for distribution by the spring of 1927 for the purpose of supplying land owners who wish to engage in reforestation work. Alabama is putting its State forestry work on a firm foundation. Col. Page S. Bunker, formerly Assistant State Forester in Texas, is now State Forester for Alabama.

Missouri Planning to "Show Them"

Forest fire prevention work was recently inaugurated by the Missouri Forestry Department through the appointment of Paul M. Dunn as District Forester in charge of this activity. Mr. Dunn will make his headquarters in the Ozark region and the work during the first year or two will be largely educational so as to build up public sentiment against indiscriminate burning in the woods.

Commission to Study Forest and Park Boundaries

The Commission on National Parks and Forests representing the President's Committee and appointed by the Executive Committee of the National Conference on Outdoor Recreation will again take the field this summer to study forest and park boundaries in the west.

Among the proposed adjustments which the commission will consider on



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Forest Fire Number

The September Number will be a Forest Fire Issue and will contain valuable information on forest fire equipment. Read it for full information.

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CHIEF FLYING CLOUD Dept. A. F. Harbor Springs, Mich.

the ground is one relating to the Yosemite National Park. Another relates to the Crater Lake National Park and a third project involves the Diamond Lake adjustment in the boundaries of the Lassen National Park.

The Commission will meet on July 21 at Merced, California, and will be represented by Hon. H. W. Temple, Congressman from Pennsylvania; William A. Welch, of the Palisades State Park, New York; William B. Greeley, Chief of the Forest Service; Stephen T. Mather, Director of the National Park Service; Barrington Moore, Secretary of the Council on National Parks, Forests and Wild Life; and Arthur C. Ringland, Secretary of the National Conference on Outdoor Recreation. Last summer the same commission spent several weeks investigating proposed changes in the boundaries of the Yellowstone National Park and the Grand Canyon National Park and performed an outstanding service in formulating on the ground definite recommendations in respect to desirable boundary changes.

It is possible that the question of National Park boundaries may also be the subject of a special investigation by the Senate Public Lands Committee, which spent a large amount of time in the west last summer investigating grazing. On June 1 Senator Gooding, of Idaho, introduced in the Senate a resolution to authorize the Committee on Public Lands "to investigate the advisability of changing the boundaries of Yellowstone National Park and other National Parks in respect to which changes in boundaries have been proposed." If this resolution is passed by the Senate a subcommittee of the Senate Public Lands Committee will undoubtedly be designated to hold hearings in the west, subpoena witnesses and otherwise to delve into the question of park boundaries.

Mt. Hood Recreation Area Established

An area aggregating 83,731 acres within the Mt. Hood National Forest and surrounding Mt. Hood has been designated as the Mt. Hood Recreation Area by a recent order of William M. Jardine, Secretary of Agriculture. By the order, these lands are to be administered for the use and enjoyment of the general public for recreation, coordinately with the purposes for which the Mt. Hood National Forest was established.

"A proper, orderly utilization of timber, forage, water power and other economic resources shall be allowed within the area, but such utilization shall not be permitted to impair the value of the area as a site for public camp grounds, municipal or health camps, sanitaria, club houses, hotels, summer homes, or public utilities, re-

quisite for the comfort and convenience of the people using the area for recreational purposes. The administration, development and use of this area shall be governed by the spirit of this order, and no use shall be allowed or permitted that will interfere with the broad public purposes herein set forth."

The Secretary's order is the result of an examination of the lands which showed that they comprise natural resources susceptible of many public uses and possessing much scenic beauty which should be available to the public. They had previously been classified as not chiefly valuable for agriculture and therefore not subject to segregation from the forests. The Secretary holds that the lands are not only of great value for National Forest purposes but also should be permanently retained in government ownership in order to provide for the protection, use and enjoyment of the general public for use in recreation. As such they can be administered by the Forest Service without additional expense to the Government.

Preservative Timber Treatment Pays

Each year brings interesting results with regard to the increased durability of creosoted timber. Results of older experiments carried on by the Iowa State College of Agriculture show conclusively that creosoted treatment of fence posts is not only a practical operation on the farm, but is the means of saving considerable money. The results make possible the use of many so-called inferior woods for fence post purposes.

A more recent experiment in which water-gas tar is used in varying proportions with creosote, is already showing some interesting results. This experiment was started three years ago in cooperation with the Tama Indian Reservation. A recent examination of the posts in this fence line show practically no failures in the cottonwood posts which were given treatment with water-gas tar. From indications it is probable that the water-gas tar will be an effective preservative. If this is the case the cost of treating fence posts will be very materially reduced since water-gas tar may be obtained at a very small cost as compared with creosote.

Fire In the Smokies

The smallest fire this spring in the Smoky Mountain District in Tennessee burned 1/20 of an acre. The largest fire was reported by W. T. Arnett and burned an area of 2800 acres. In spite of the large size of this fire the average acreage burned over per fire in the Smokies this spring was less than the average for the spring season last year.

Filibert Roth Tree

THE coming years will see another stately elm, planted in loving memory to one who was truly a friend of the forest—Filibert Roth. For such a tree was planted by his friends in Palmer Park, in Detroit, early in May. The planting was conducted by the Twentieth Century Club, and the ceremony opened by Mrs. Fred L. Vandever, chairman of the conservation committee. "What more fitting monument could we erect for Prof. Roth than one of the trees he



THE FILIBERT ROTH MEMORY TREE

loved?" Mrs. Vandever said. The history of Roth and his great service to forestry in its most practical phases is too well known to need further comment. For over twenty years he was an outstanding figure in educational work, heading the forestry department of the University of Michigan. A simple address of dedication was made by Mrs. Benjamin F. Williston, who has long been active in conservation work, and who for years was associated with Prof. Roth in his fight to have the State reclaim cut-over and burned-over lands. "Michigan is better for having known him," she declared. The planting was concluded with a prayer by Rev. Dr. Mark F. Sanborn and a song by the children of the Greenfield School.

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LA FAYETTE (Dessert, 1904.) Rose type; midseason. A gorgeous variety. The flowers of giant size, last for fully two weeks, the petals beautifully fringed. A lovely shade of salmon-pink, with touches of heliotrope; a delicate tinting of cerise. La Fayette sets a high water mark. \$2.00.

ETTA (Terry, 1904.) Rose type; late. Very large, flat flower, uniform delicate Hydrangea-pink; fragrant. Blooms same time as Grandiflora and ranks with that grand variety. \$2.00.

PRESIDENT TAFT (Blaauw, 1909.) Rose type; midseason. Originated in France, taken to Holland, named "Frankryh," or "La France."

Before sold the name was changed to President Taft. Mr. Ward Welsh, says; "President Taft stands at the head of all Peonies." The flower is enormous, none larger. Delicate Hydrangea-pink, completely enveloped in a halo of angelic white. The fragrance is delicious. \$2.00.

WELCOME GUEST (Hollis, 1934.) Semi-double type; midseason. Large, loose flower of uniform glossy silvery-pink, changing to rose-white; fragrant. Erect, tall, strong grower; free bloomer. Very good. \$2.00.

JEANNIE GAUDICHAU (Millet, 1903.) Angelic white, developing a flamy mist of seraphic pink; petals beautifully fringed, center petals scalloped and bordered with carmine. A wonder. \$3.00.

EUCARHIS (Lemoine, 1909.) Rose type; late. Very large, compact, globular flower, creamy-white; very sweetly perfumed. Extra good. \$3.00.

GISELE (Lemoine, 1902.) Rose type; late midseason. Large,

full, double flowers paper-white shaded amber-cream; a beautiful Peony. \$4.00.

ALBATRE (Crousse, 1885.) Rose type; midseason. One of the finest of all white Peonies. This is identical with the variety Avalanche. \$1.00.

LOUIS VAN HOUTTE (Calot, 1867.) Semi-rose type; late midseason. Very fine, shapely bloom; medium to large flower; color bright violaceous-red of dazzling effect. Old favorite. 60c.

AUGUSTE VAN GREET (Permentier, 1850.) Bomb type; midseason. Deep crimson-violet. 90c.

PHILOMELE (Calot, 1861.) Anemone type; midseason. Guard or primary petals bright violet-rose, anemone center, of linguatula narrow golden-yellow petals changing to cream or amber-yellow. As the flower develops a crown appears of bright rose edged dark crimson. True honey fragrance; strong, upright and fine bloomer. Distinct and novel. \$1.00.

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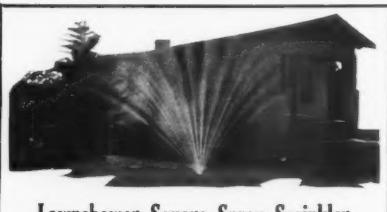
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Congress and Its Conservation Record

THE first session of the 69th Congress came to a close at three o'clock on the afternoon of July 3. The final days were characterized by the usual high-pressure legislation. Reviewing the accomplishments of the session in the field of conservation there is little of real importance to record. Practically all of the important conservation measures were left unenacted. Among these were the McNary-Woodruff bill which although passed in amended form by the House did not receive consideration in the Senate due primarily to opposition on the part of Senator Overman of North Carolina; and the Game Refuge bill which was likewise passed by the House and then effectually blocked in the Senate by a small group of Senators. The National Arboretum bill on the other hand was passed by the Senate but failed in the House.

The question of regulating grazing on the Public Domain was left unsettled. The amended Stanfield bill came up numerous times in the Senate but its consideration was invariably objected to by various Senators. As one newspaper man commented, "With the conservationists against it, this legislation couldn't even get to first base." The bill, it will be recalled, was originally the object of a nation-wide attack due primarily to the fact that it attempted to establish dangerous grazing regulation for the National Forests as well as for the Public Domain. A separate bill on somewhat the same order, but applying to Public Lands in Alaska only, was passed in the Senate in the closing days, but no action was taken on it by the House.

The bill to grant relief to eighteen counties of Oregon which have suffered loss of taxes on account of certain lands originally granted to the Oregon and California Railroad Company, reverting to the Government, was finally passed by the Senate. It had previously been passed by the House. At the time of going to press the President had withheld his signature from this measure, which had been opposed not only by the Department of the Interior but likewise the Bureau of the Budget. Comments on the conservation features of this legislation are given in the editorial section.

The second deficiency bill passed during the last hours of the session, appropriated \$100,000 to be used in the economic administration, protection and development of the National Forests in Southern California. The appropriation is to be used in the fiscal year 1927 and is contingent upon an equal amount being contributed by the State. The bill also made available the sum of

\$3,000 for the payment of traveling expenses of members of the committee, created upon the recommendation of the President's Committee on Outdoor Recreation, to study and report upon the adjustment of boundaries of National Parks and National Forests. It also appropriated \$200 to be used by the Forest Service to mark the graves at Newport, Washington and Priest River, Idaho, of men who lost their lives in fighting forest fires in 1925.

Two bills creating two new forest experiment stations were passed and signed by the President. One provides for a station in the Ohio Valley and the other for a station in Pennsylvania. The acts authorized an appropriation of \$30,000 for each station but the actual appropriation was not made so that the stations cannot be established until further legislation, making available appropriations, is passed.

Congress passed and the President signed a bill introduced by Senator Jones, of New Mexico, which provides that hereafter no forest reservation shall be created or any additions made to present National Forests in the states of New Mexico and Arizona except by act of Congress. This is the first instance in which the President, in a special bill has been asked to limit his authority to create National Forests. Similar limitations apply in practically all of the other southwestern states except in Utah, but in each instance the legislation was in the form of a rider in the regular appropriation bill for the Department of Agriculture.

In the matter of appropriations under the regular Department of Agriculture Appropriation bill a number of increases were granted. Total appropriations for protective forest fire cooperation for the fiscal year 1927 is \$710,000; for distribution of forest tree seed and planting stock, \$75,000; for National Forest camp grounds, \$40,000; for experiment stations, \$250,000; for the Forest Products Laboratory, \$403,264; for Fire Weather Warning Service, \$18,450; and for control of the white pine blister rust, \$368,280.

The most important legislation relating to National Parks includes that creating the Shenandoah, Smoky Mountain and Mammoth Caves National Parks in the South, conditional upon the lands being donated to the Government. A complete statement of this legislation is given elsewhere in this issue. Congress also passed the bill enlarging the Sequoia National Park to include an addition of about 225,000 acres embracing the Mt. Whitney and Kern River country. This area has long been a part of

the National Forest. The act as passed by the House, provided for changing the name of the park to "The Roosevelt-Sequoia National Park." This proposal was not approved by the Senate. The proposal to include the King River country in the park was likewise not approved.

A bill to make additions to the Absaroka and Gallatin National Forests and the Yellowstone National Park and to improve and extend the winter feeding facilities of the elk, antelope and other game animals in and surrounding the National Park, was passed and signed by the President. The act authorizes the extension of the reserves named, through donations of land and by purchase by the Secretary of the Interior with such funds as may be donated for the purpose.

On July 2, the Senate agreed to a resolution authorizing the committee on Public Lands and Surveys to hold hearings and to investigate the boundaries of Yellowstone and other National Parks. This resolution introduced by Senator Gooding, of Idaho, originally provided an appropriation of \$15,000 for the expenses of the committee but this sum was reduced to \$3,500.

In the realm of wild life conservation the only measures of special interest

which Congress enacted are a bill which prohibits the interstate transportation of black bass, caught, purchased, sold or possessed illegally, and a measure which authorizes the Secretary of the Interior to lease Public Lands in Alaska for private fur-farming purposes.

New Jersey's Forestry Progress

In 1926 the Legislature of New Jersey made available \$30,000 for acquisition of additional State Forests; endorsed a program for the ultimate acquisition of at least 200,000 acres for forest purposes; provided for the enlargement of the State Forest nursery and provided for the payment of local taxes on State Forest lands at the rate of 10c per acre.

Midsummer Meeting of National Lumbermen

The semiannual meeting of the National Lumber Manufacturers' Association has been set for August 5. On August 3 a regional meeting will be held at Spokane with the Western Pine Manufacturers' Association and on August 10 a regional meeting is planned for in San Francisco with the California Redwood Association and the California White and Sugar Pine Manufacturers' Association.



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Wilderness Areas Designated in Superior National Forest

Acting Forester E. A. Sherman ap-
proved on June 30 a plan of management
for the Superior National Forest in
Northern Minnesota which will be of
interest to advocates of the wilderness
as an essential feature of the nation's
recreational development. The complete
plan projects a policy of forest manage-
ment, forest protection, acquisition, recrea-
tion, water power and other forest activities.
Under recreation it recognizes three general
divisions of use, namely, canoeing, motor-
ing and resort and summer cottage oc-
cupancy. For these broad activities it
establishes the policy of allocating cer-
tain areas to definite forms of use.
Three large areas at the present time,
practically roadless, undeveloped and, in
fact, wilderness, have been designated as
wilderness canoe areas which will be
maintained in a primitive state as nearly
as is consistent with timber harvesting
and protection. Timber cutting will be
regulated to preserve the scenic effect
of the shorelines and summer homes,
hotels, resorts, etc., will not be permitted
on primary canoe routes, except at termi-
nal points. The total area to be main-
tained as wilderness tracts approximates
one thousand square miles.

In the areas designated for motor re-
creation, which are quite apart from the
wilderness areas, motoring will be con-
fined to roads built by states and coun-
ties for general use and by the Forest
Service for administration and protection
purposes. Recreation roads will not be
constructed or advocated. Summer homes
and resorts in the forest will be develop-
ed to a limited extent only.

One of the areas designated as wilder-
ness canoe region is a large slope of
country bordering the international
boundary south of Lake LaCroix. An-
other embraces the upper watershed of
the Kawishiwi River, and the third em-
braces the roadless region surrounding
West Pike and Pine Lakes in the ex-
treme northeastern part of the forest.

The Superior National Forest is con-
sidered not only the finest but prac-
tically the last wilderness canoe region
in the United States, and for several
years there has been a concerted move-
ment afoot to have parts of the forest
managed in line with a policy of keeping
them in a wilderness state. Canoe en-
thusiasts, sportsmen and other recrea-
tional advocates have feared that these
water areas will be spoiled for canoe
and wilderness recreation by the present
mania of roadbuilding, which sooner or
later would open them to the so-called
"tin-can" tourists, tourist resorts and gas
stations. The policy of the Forest Ser-
vice in protecting these areas as wilder-
ness tracts, it is held, will be reassuring
to those who have held this fear.

Wilderness Resolutions From Arizona

The Tucson Natural History Society
has recently adopted some very encour-
aging resolutions bearing on the increasing
interest shown by the American people in
recreation, camping, the out-doors, natural
wonders and the preservation of resources.

They are concluded with the following
section:

"RESOLVED, that we express our
deepest appreciation and thoroughgoing
approval of the Wilderness Area concept
so ably expounded by Aldo Leopold of
recent months, and we believe Ovid M.
Butler, Editor of AMERICAN FORESTS AND
FOREST LIFE, deserves every encouragement
in his campaign to bring this important
matter emphatically and increasingly to the
attention of the American people. The
situation is urgent. Selfishness and the
desire for universal exploitation are ram-
pant. We feel, however, that these pred-
atory and destructive tendencies cannot pre-
vail, in the long run, if the ideals of the
American people can be aroused to action
on the basis of obvious facts. We here
and now, as individuals and as an organiza-
tion, pledge ourselves to stand for the
Wilderness Area idea, and do command the
same to legislatures, State and National,
to organizations of sportsmen and con-
servationists, and to the United States
Forest Service and Biological Survey, the
National Park Service and the President's
Conference on Outdoor Recreation."

Logging Congress Dates

The annual fall meeting of the Appal-
achian Logging Congress will be held at
the Sinton Hotel, Cincinnati, Ohio, October
12 and 13, according to announcement by
Stanley F. Horn, Secretary. The Con-
gress is made up of principals and depart-
ment managers of the lumbering enterprises
and allied lines in the Appalachian district.

New State Park For Arkansas

Through the generosity of John R.
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of Arkansas to be known as Samuel
Fordyce State Park. The tract is named
in honor of Mr. Fordyce's father, who
first brought to the attention of Congress
in 1878 the need for protecting the timber
on the hills which had been reserved about
Hot Springs from the public domain many
years before.

The new park contains an unusual variety
of trees and other plant species and is
particularly rich in ferns.

It is the hope of Mr. Fordyce that an
active Commission may soon be provided
for by the legislature to care for a grow-
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care of voluntary local interests.



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BOOK NEWS AND REVIEWS



SECRETS OF THE FRIENDLY WOODS. By Rex Brasher. The Century Company, New York City. \$2.50.

Written all about the woods and birds and little animals, which the author has patiently and lovingly studied for many years. A natural history artist of renown, Mr. Brasher has illustrated this charming little book with twenty-four full-page reproductions of his drawings. And his story of the life of the little people of the woods—how they play, forage for food, fight and make love, is easily and delightfully done. You will read it with a fresh appreciation of the woods and their haunting mystery, and leave it with a new and satisfying sense of intimacy with the daily lives of the little people there.

MORE ABOUT SUMMER CAMPS. By Henry Wellington Wack. Published by The Red Book Magazine, Department of Education, 33 West 42nd Street, New York City. Price \$2.00.

The day of the "old swimmin' hole" and the glories of Huckleberry Finn's adventures are bound, sadly enough, to fade out of the lives of the boys and girls of the present day. Something must replace these things and in this volume the author has employed an amazing array of information about outdoor camps for girls and boys throughout this country.

Not only are there descriptions of the equipment, location and ideals of the va-

rious camps but there are chapters full of outdoor information. Among these are, "What Campers Learn in Camp," "Death Cry of Our Forests" and "Recreation and Wild Life."

A significant passage refers to dictionary definitions of the word, "hike," and it is to be hoped that lexicographers may confer briefly with outdoor enthusiasts before issuing future editions of dictionaries. A hike is now variously described as "a weary journey on foot (local, United States)" or "to march laboriously." The latter definition is soberly recorded in Webster's.

Camp leaders, parents of growing boys and girls and lovers of the outdoors generally will find much that is worth while in this book.

S. W. A.

HIGH COUNTRY, THE ROCKIES YESTERDAY AND TODAY. By Courtney Ryley Cooper. Little, Brown and Company, Boston. Price \$2.50 net.

Mr. Cooper's book on the "High Country" is a real photograph of the western mountains, as they were and as they are. He does not attempt to make his photograph attractive to the uninterested, but presents facts.

The book contains invaluable hints and suggestions for the prospective traveler in the Rockies. The idea that most people have, when affected by the germ of "wanderlust," is that a combined camping and touring trip for several weeks or months,

means the complete dismantling of one's city residence and the transfer of one's wordly goods to a patient and uncomplaining automobile. On smooth city streets "friend auto" may remain Job's disciple, but on rough, winding, narrow, steep mountain paths there's a different story. Mr. Cooper tells that story. He goes into the art of mountain road driving, and it is an art. He explodes, and seemingly with great gusto, some of the time-old theories of our "wild and woolly west." He has traveled through this country by pack trail, afoot, with fishing rod and gun. His wanderings have led him through hundreds of deserted towns, once filled with feverish gold seekers, now completely uninhabited, tumbled down shacks and numerous flimsy saloons, sole relics of a great episode in the history of the West. There is a touching pathos in his descriptions of the lone, raggedy survivors who haunt the mountain trails, still searching for gold, still hanging on to their claims, and still talking of "independent riches" if someone could only be made interested in these claims. Several of the figures famous in the old West are told of, such as Buffalo Bill, and some of the old renegades who delighted in "shooting up the town,"—Jesse James, Bob Ford and Henry Starr.

Mr. Cooper does not try to fictionize the mountain trail in order to lure his readers on, but tells plainly of the hard-

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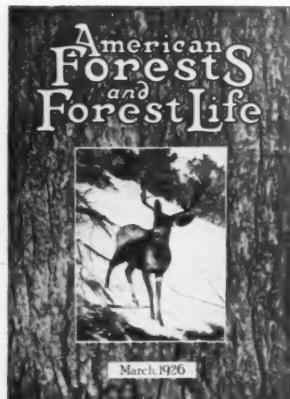
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ships necessarily met with and the discomforts inevitably accompanying this type of travel. He has, however written a picturesque book which will have great appeal for the inveterate outdoor's man who already knows this country and for the man who some day hopes to visit it.

G. I. N.

TREES AND SHRUBS OF BRITISH COLUMBIA.
By James R. Anderson. Charles F. Banfield, Victoria, B. C., Printer to the King's Most Excellent Majesty.

Prepared principally as a reference book for use in the schools, this book treats of the food, medicinal and poisonous plants of British Columbia as well as gives authentic information relative to the trees and shrubs of the Province. It will undoubtedly prove not only of value to the student, but of material assistance to teachers in the stimulation of a wider and more intelligent interest among students. The concluding chapter treats of forests and their protection, and was contributed by the Forestry Branch of the Department of Lands, Victoria, B. C. The book is profusely and beautifully illustrated with half-tone plates and reproductions of botanical line drawings of great practical value.

THE 1926 MUNICIPAL INDEX

Announcement is made by the American City Magazine, publishers, of the 1926 Municipal Index, available now at \$4.00 a copy. It is a handsomely bound volume of about 600 pages, and comprises a reference work of great practical value to municipal officials and engineers, civic organizations, educators, public libraries and others having to do with municipal and county improvements. It is divided into 20 sections, covering the chief important municipal activities, with bibliographies and condensed catalogues of manufacturers included at the end of many of the sections.

THE BOYS' BOOK OF CANOEING. By Elon Jessup. E. P. Dutton & Company, New York City. \$2.00.

Everything any boy would want to know about canoes and canoeing will be found in this book. It tells all about handling the boat, paddling, poling, sailing and camping as well. It covers the important question of choosing a canoe; rules for using it safely. It gives technical advice on paddling; good, common-sense suggestions on outfitting and a description of the way to camp by canoe, and it is fully and informatively illustrated with half-tones and line drawings. It will make you long to get on the water, with the feel of a paddle in your hands, to glide swiftly and silently along and test your real skill as a canoeist.

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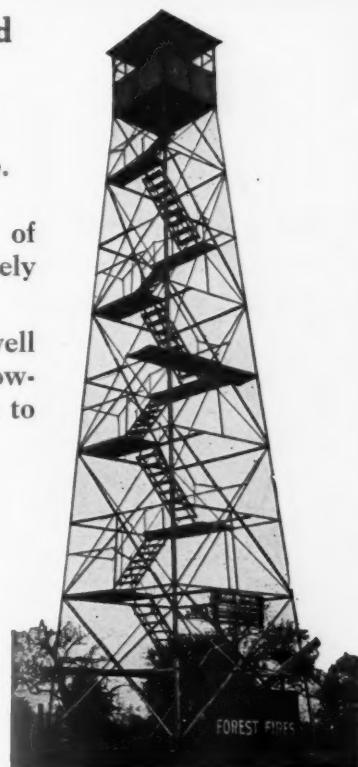
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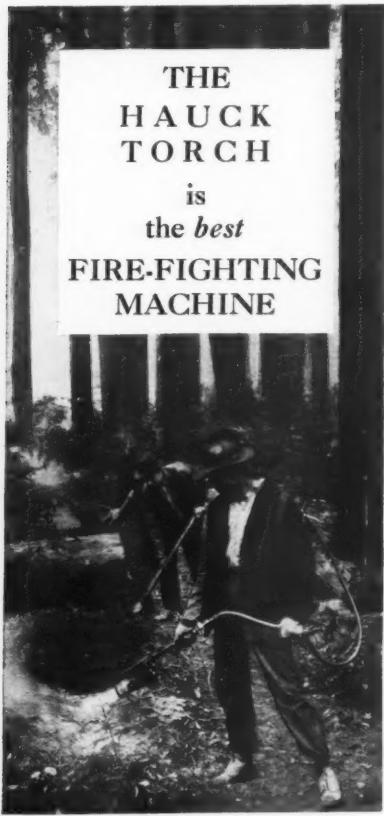
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With the Ranger Naturalists

(Continued from page 492)

tainly not educational in the academic sense; rather was it the voice of the Yellowstone, finding its expression in simple words through this young Ranger Naturalist. I resolved—and so did most of my neighbors—to avail myself the next morning of the opportunity of visiting the small museum at these headquarters and also of the opportunity of taking one of the excursions conducted by the government Ranger Naturalist.

A fifteen-foot pile of elk-antlers and an old stage coach in front of the Yellowstone museum attracts one's interest from afar. The building is not large—indeed, as in the other Parks, the big museum is the Park itself and it is the function of the exhibit to correlate and explain what the visitor himself will see in the open. When educational exhibits of each Park are complete, they will seldom be housed under one roof but will be placed where they are of most value in explaining the great natural exhibits. Therefore, branch museums and occasional smaller out-of-doors displays will be often met where some natural phenomenon is to be explained.

Upon entering the building we met Mr. J. E. Haynes, who had recently been appointed Acting Director of the Yellowstone Museum. We found him rearranging the collections, so that instead of being a number of individual exhibits, each unit would perform its own definite part in telling the consecutive story of the Yellowstone. The museum collections are far from complete—indeed, with the lack of funds for the purpose, they have grown almost entirely through the personal zeal of members of the Park Service and visiting scientists. We especially admired the splendid bird and mammal paintings by Park Naturalist E. J. Sawyer, which make this one department unique among the museums of the country.

A Ranger Naturalist announced that the morning's field trip was about to start. We followed him, some fifty of us, mostly newcomers to the Park, across the formations. Other groups that had started from Mammoth Hotel and from the auto camp were starting out. We had looked at the beautiful terraces of Mammoth Hot Springs yesterday afternoon, but how different they were when seen through the eyes of a mentor. Of course we visited the chief points of interest and learned much about hot spring activities but there were many little features which made the trip doubly interesting. There were petrified bubbles and the Stygian Cave which takes its daily toll of birds and mammals that wander into the depths, never to return.

Then there was the hot underground Devil's Kitchen and afterwards a flower-bordered woodland trail to Sepulchre Mountain, where we met a bear and were whistled at by marmots.

But there were other educational activities to inspect in Yellowstone besides those at Mammoth. Indeed, Ranger Naturalists or information rangers, are stationed at every tourist center, and Superintendent Albright requires of the rangers that they know something of the wild life they protect. Under his encouragement, the rangers at each station keep "open house" for their neighbors of the wilderness and there is great rivalry as to the relative merits of these wild pets. At one station, a ranger will whistle and out comes a fat marmot from under the cabin to receive some tid-bit; at another a bear will be lying a stone's throw away waiting for the dinner scraps; and at Tower Falls, Ranger Bauman will tell you how Beelzebub, his pet crow, stole a fifteen-cent pocket comb but brought him a battered silver quarter in exchange.

At Old Faithful, the young men who led us over the geyser formation were university-trained geologists specially selected for their ability to explain the principles of geyser action. To make the explanation more vivid, there is in the branch museum maintained at Old Faithful Ranger Station, a model geyser which erupts every minute to a height of about two feet, working on the same principle as the larger geysers out-of-doors.

At Lake Yellowstone, at Canyon and at the summit of Mount Washburn we again came into contact with the park rangers, listened to their evening lectures, and were told of the educational service planned at their respective stations by Superintendent Albright. It was my duty, however, to push on to Camp Roosevelt, the natural history center of the Park, where Dr. Henry Conard has developed such a splendid nature guide system.

We were met by Dr. Conard as we drove up to the Lodge and in short words of welcome, he told us of the abundant wild life in this vicinity. After dinner we joined the party which he had already gathered together for a sunset walk to a near-by creek where we sat and watched the beavers building their dams and going about their domestic duties and play. It was Sunday, and the fifty or sixty of us who were guests in camp that night, will long remember Dr. Conard's address, "The Religion of a Naturalist." It called to mind

the old saying "to be nature-minded is better than to be nature-wise."

For some time we had been looking forward to seeing the standing fossil forests. Now at last we were near them, and so on the following morning we hired horses for a trip to Specimen Ridge. Every moment of that ride was interesting. A band of antelope thrilled us. Dr. Conard said, however, that they were seen almost every day, but that the moose who met us in a tiny woodland park, seldom showed himself even to naturalists. Some elected to remain at the summit of the ridge to enjoy the unbounded view but we clambered down the steep north slope to the fossil forest, which is not yet reached by trail and is therefore seldom seen. We had heard of there being several forests, one above the other, but were nevertheless surprised to find twelve of them, each of which had been seeded and grown to maturity after its predecessor had been buried by showers of volcanic ashes such as destroyed Pompeii. The

huge trunks have been identified as sequoias and the other smaller ones as magnolia, sycamore, and other semi-tropical plants which prove the warmth of Yellowstone's ancient climate.

We were much interested in Dr. Conard's branch museum with the excellently preserved flowers and other exhibits pertaining to the wild life. This, he explains, will, at some future date, be the most important station in the Park for the study of wild life because of the splendid opportunity to observe living communities of wild things. Let us hope that a building and equipment will soon make this possible.

These are but a few of our adventures in Yellowstone and Glacier. In Rocky Mountain, Mesa Verde, Rainier, Yosemite and other National Parks, our visit was made doubly enjoyable by the rangers, Ranger Naturalists and Park Naturalists of the National Park Service, who are putting into every-day language for visitors the secrets that have for so long remained hidden.

Preserving American Antiquities

(Continued from page 471)

Next in order is Natural Bridges National Monument, reached from Blanding, Utah. The bridges on this Monument, three in number, have not the graceful arch of the Rainbow Bridge, but are broad spans and beautifully proportioned. Many cliff dwellings and caves in this region lead to the belief that at one time these canyons were well populated.

Pipe Springs is the most recent of the Monuments, historically speaking, as it commemorates the history of the Mormon pioneers. Here in early days, Whitmore and McIntyre built a cabin of stone, and after they were shot and killed by the Indians, the Mormon church took the place over for a cattle ranch where the cattle brought in by tithing might be cared for. Under orders from Bishop Winsor the large fortified residence known as Winsor Castle was built. Two two story houses were built facing each other and the space between enclosed by large and heavy wooden gates, making a courtyard where horses and wagons could be brought to safety in case of seige. In the upper building a never failing spring of clear cold water arose, flowed across the courtyard through the milk room in the lower house and then flowed on out through a wooden pipe. This made the house practically impregnable as the Indians could neither shut off the water supply nor poison it. The spring still flows and makes Pipe Springs with its trees and

ponds a real oasis in the desert. This place received its name in an interesting manner. Jacob Hamblin, Mormon missionary and guide, camped here with his friends on one of his early expeditions to the Piutes. Since he was a noted rifle shot the talk centered on marksmanship and a wager was made that he could not shoot through a silk handkerchief hung by the upper corners at a distance of twenty yards. Hamblin indignantly claimed that a blind man could hit such a mark. He shot, but the force of the bullet lifted the handkerchief and let his bullet drop. Chagrined by his failure, Jacob made a return wager that if he couldn't hit a handkerchief he could at least shoot the bowl out of his friend's good pipe without breaking the rim. His friend lost both his wager and his pipe, and from that time on the spring was called Pipe Spring.

This has been only a résumé of the Southwestern Monuments. There is not one that would not repay a visit. The National Monuments are all primarily educational rather than recreational and in several of them are interesting museums. Monuments are not tombstones, nor are they just second class Parks, but each one is an individual educational exhibit, where archeology, history, geology or botany may be studied on the ground. In many cases the effort is to preserve relics of the past, which, once gone, can never be replaced, and in each case an ounce of protection is worth a pound of restoration.

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Why Not Bamboo?

(Continued from page 463)

one of which is that the crushed bamboo expands so greatly that it occupies twice the space it took up when in the stems.

So there is research work yet to be done, but it is profitless to permit our chemists and manufacturers to forge ahead in the laboratory if we are not prepared to supply a dependable quality of raw material for commercial requirements. It is a subject for consideration as adding one more commercially home-grown product to our national resources, and deriving profit from land now lying idle.

Raising bamboo on a commercial scale in the United States is well worth thorough investigation, for not only should it pay for itself with its present products but, once established, new uses will be thought out and new processes by which it can be converted and adapted to our growing needs until it becomes one of our indispensable crops.

Isle Royale

(Continued from page 459)

for National Park purposes. The party spent six days cruising around the island, taking many trips inland. They looked upon some of the finest specimens of whitefish, lake and brook trout in America; they followed moose trails, cruised timber, sought out the famous Thompsonites and Chlorastrolites, rare stones found in but one other place in America, followed winding, swift flowing inland streams, looked upon a few of the 40 odd inland lakes within the island; explored shore line caverns, watched the moose feeding at twilight, visited with the few commercial fishermen and attempted to accomplish something that would take the ordinary mortal at least six months. But even with this hurry, the judgment of the entire party was that Isle Royale would make the most wonderful water and trail park east of the Mississippi River. Mr. Mather went farther and stated that next to Yellowstone and Yosemite National Parks, Isle Royale, in its present condition, was as great a moose and caribou sanctuary as exists in America today.

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Against the earth's sweet flowing breast:

A tree that looks at God all day
And lifts her leafy arms to pray;

A tree that may in summer wear
A nest of robins in her hair;

Upon whose bosom snow has lain;
Who intimately lives with rain.

Poems are made by fools like me,
But only God can make a tree.

—JOYCE KILMER.

(Who gave his life in France.)



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